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U.S. Department of the Interior
Bureau of Land Management
Arizona State Office

Tucson Field Office

July 2003

Approved Las Cienegas Resource Management Plan and Record of Decision

The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield; a combination of uses that take into account the long term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific, and cultural values.

BLM/AZ/PL-03/010

Approved
Las Cienegas Resource Management Plan
and
Record of Decision

Prepared by

U.S. Department of Interior
Bureau of Land Management
Tucson Field Office
Arizona

July 25, 2003

It is my recommendation that the Arizona State Director approve the Las Cienegas Resource Management Plan / Record of Decision.

Shela A. McFarlin

Shela A. McFarlin
Field Manager, Tucson Field Office

It is my decision to approve the Las Cienegas Resource Management Plan / Record of Decision.

Elaine Y. Zielinski

Elaine Y. Zielinski
State Director, Arizona

This document integrates the approved Las Cienegas Resource Management Plan with the Record of Decision.

TABLE OF CONTENTS

INTRODUCTION 1
  Las Cienegas National Conservation Area Act 1
  The Sonoita Valley Planning Partnership 3
  Changes to the Proposed Las Cienegas RMP/Final EIS 5
    Protest Resolution 5
    Governor Consistency Review 5
    Section 7 Consultation with the U.S. Fish and Wildlife Service (USFWS) 5
APPROVED RMP LEVEL DECISIONS 6
  Desired Future Conditions 6
  Land Use Allocations 12
  Special Designations 21
  Land Tenure Adjustments 25
  Management Actions 26
DECISION RATIONALE 70
  Desired Future Condition Objectives 71
  Alternatives Considered 74
  Environmentally Preferred Alternative 76
IMPLEMENTATION 76
  Adaptive Management 77
  Administrative Actions 77
  Requirements for Further Environmental Analysis 77
  Monitoring & Evaluation 78
PLAN MODIFICATION 82
  Plan Maintenance 82
  Plan Amendments 83
  Plan Revision 83

ABBREVIATIONS .... Inside Back Cover

APPENDICES

Appendix 1: The Las Cienegas NCA Act .... A1 - 1
Appendix 2: The Sonoita Valley Planning Partnership Case Study .... A2 – 1
Appendix 3: Errata Sheet for the Proposed RMP/EIS .... A3 – 1
Appendix 4: Standard Land Use Plan Decision Numbering Convention .... A4 – 1
Appendix 5: Biological Opinion Summary .... A5 – 1
Appendix 6: ACEC Management Prescriptions .... A6 – 1
Appendix 7: Las Cienegas Acquisition Strategy .... A7 – 1
Appendix 8: Integrated Vegetation Treatment Program .... A8 – 1
Appendix 9: Monitoring Protocols .... A9 – 1

REFERENCES .... R - 1

MAPS

✓ Map 1: Las Cienegas NCA and Sonoita Valley Acquisition Planning District 2
✓ Map 2: Minerals Management 14
1 → Map 3: Utility Corridors 15
2 → Map 4: North Half – Route Designations 17
3 → Map 4 South Half – Route Designations 18
✓ Map 5: Recreation Management Zones 19
✓ Map 6: Arizona Trail Route 22
4 → Map 7 Grazing Management.. 23
5 → Map 8 Special Designation Areas.. 24
✓ Map 9 Administrative Sites.. 27
✓ Map 10 Vegetation Treatments... 29
→ Map 11 Fence Modifications 37
✓ Map 12 Pronghorn Habitat and Fawning Area 39
6 → Map 13 Road Right-of-Way Acquisitions... 42
✓ Map 14 North Canyon Motorized Trail Route.. 48
✓ Map 15 Designated Recreation Sites 49
→ Map 16 Existing and Planned Range Improvements... 60
✓ Map 17 Livestock Crossing Lanes and Watering Areas 61

TABLES

Table 1: Land Ownership: Las Cienegas NCA and Sonoita Valley Acquisition Planning District 3
Table 2: Pool Habitat and Cover Requirements for Selected Segments in Cienega Creek.. 10
Table 3: Desired Recreation Opportunity Settings 20
Table 4: Livestock Grazing Allocations 25
Table 5: Designated Road Crossings on Cienega Creekand Empire Gulch 32
Table 6: Special Recreation Permit Guidance by Recreation Zone................................ 45
Table 7: Primary Recreation Activities by Zone... 46
Table 8: Route Maintenance Guidance by Zone.. 50
Table 9: Summary of Anticipated Fencing, Empire-Cienega Allotment 57
Table 10: Summary of Anticipated Empire-Cienega Allotment Water Developments 58
Table 11: Livestock Crossing Lanes and Watering Areas, Empire-Cienega Allotment 59
Table 12: Vegetation Communities and Associated Wildlife Species 73
Table 13: Comparison of Vegetation Production under Three Rainfall Regimes and Forage Consumption by Livestock 75

INTRODUCTION

The approved Las Cienegas Resource Management Plan (RMP) is a plan for managing 49,000 acres of public land, resources and uses within Las Cienegas National Conservation Area (NCA) and Sonoita Valley Acquisition Planning District (SVAPD) (Map 1). We have prepared this approved RMP and Record of Decision (ROD) according to the requirements of the Federal Land Policy and Management Act (FLPMA), the National Environmental Policy Act (NEPA), the Act establishing Las Cienegas National Conservation Area (H.R. 2941), and BLM management policies, including BLM Manual section 1601 - Land Use Planning (11/22/01) and BLM Land Use Planning Handbook H-1601-1 (11/22/01). The approved RMP/ROD was developed with broad public participation through a six-year collaborative planning process with the Sonoita Valley Planning Partnership (SVPP).

Through this document BLM is making land use plan decisions, including desired resource conditions, land use allocations, special designations, and land tenure decisions for Las Cienegas NCA and BLM-administered lands within the SVAPD.

The approved Las Cienegas RMP is designed to achieve or maintain desired future conditions that were developed through the collaborative planning process with the SVPP. Under the approved RMP, the public lands are open to livestock grazing and dispersed recreation. Both motorized and mechanized vehicles are limited to designated routes. Recreation is managed within three zones. Two utility corridors are established and the public lands are closed to mineral entry and location. The public lands in the planning area are designated as an Area of Critical Environmental Concern (ACEC). This approved RMP also includes a series of management actions to meet the desired resource conditions for upland and riparian vegetation, wildlife habitats, cultural and visual resources, as well as livestock grazing and recreation management actions.

Las Cienegas National Conservation Area Act

The Las Cienegas NCA and SVAPD were designated by Congress and signed into law by the President on December 6, 2000, in order to conserve, protect, and enhance the unique and nationally important aquatic, wildlife, vegetative, archaeological, paleontological, scientific, cave, cultural, historical, recreational, educational, scenic, rangeland and riparian resources and values of the public lands within the NCA, while allowing livestock grazing and recreation to continue in appropriate areas. Appendix 1 includes the text of Public Law 106-538.

Together, Las Cienegas NCA and the SVAPD encompass nearly 96,000 acres (Table 1). Situated in southeastern Pima County and northeastern Santa Cruz County, the areas are within an hours drive of the rapidly growing Tucson metropolitan area. In addition to Tucson, the areas are readily accessible from the nearby towns of Sonoita, Patagonia, Benson and Sierra Vista.

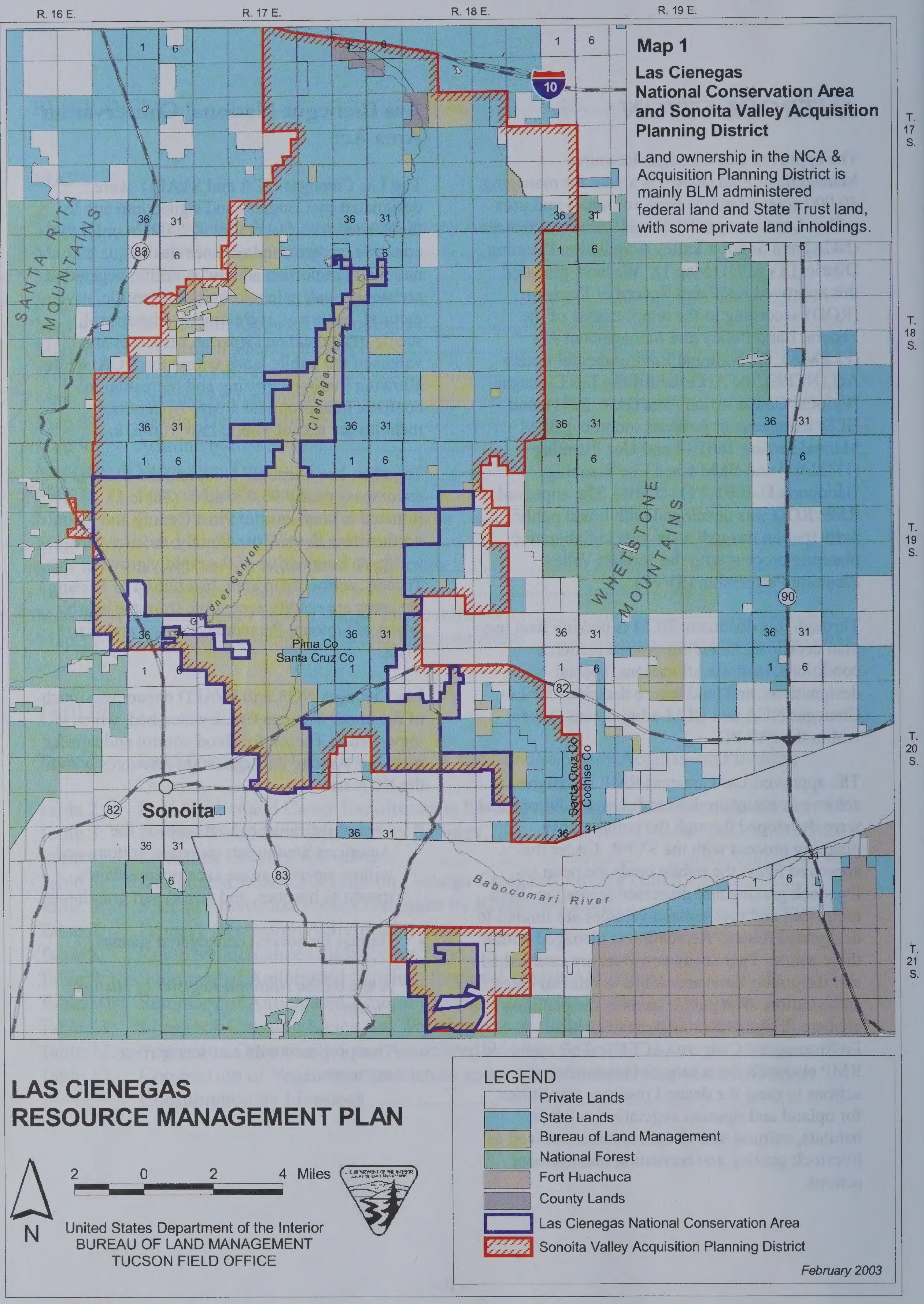
Las Cienegas NCA and SVAPD encompass much of the upper Cienega Creek watershed, which is important to Tucson for flood control and aquifer recharge. Among the significant resources within the NCA are:

- Five of the rarest habitat types in the American Southwest: cienegas, cottonwood-willow riparian areas, sacaton grasslands, mesquite bosques, and semidesert grasslands.

- Habitat for several endangered species.

- A site on the *National Register of Historic Places*.

- Two proposed wild and scenic river segments.



Map 1

Las Cienegas National Conservation Area and Sonoita Valley Acquisition Planning District

Land ownership in the NCA & Acquisition Planning District is mainly BLM administered federal land and State Trust land, with some private land inholdings.

R. 16 E.
R. 17 E.
R. 18 E.
R. 19 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
10
83
82
90
SANTA RITA MOUNTAINS
WHETSTONE MOUNTAINS
Cienega Creek
Gardner Canyon
Pima Co
Santa Cruz Co
Cochise Co
Sonoita
Babocomari River
LAS CIENEGAS RESOURCE MANAGEMENT PLAN
2
0
2
4 Miles
N
United States Department of the Interior
BUREAU OF LAND MANAGEMENT
TUCSON FIELD OFFICE
LEGEND
Private Lands
State Lands
Bureau of Land Management
National Forest
Fort Huachuca
County Lands
Las Cienegas National Conservation Area
Sonoita Valley Acquisition Planning District
February 2003

Table 1. Land Ownership: Las Cienegas NCA and Sonoita Valley Acquisition Planning District

Land Ownership	NCA (acres)	Planning District (acres)
BLM	41,972	7,917
State of Arizona (inholding)	5,225	73,158
Private (inholding)	82	14,534
TOTAL:	47,279	95,609

The Act establishing Las Cienegas NCA directs BLM to prepare a comprehensive management plan for the long-term management of the public lands within the NCA within two years of designation. The goals and objectives developed by the SVPP are the foundation for this plan. Achieving the goals and objectives supports the conservation, protection and enhancement of the NCA's resources and the uses they support. The goals and objectives are also intended to meet or exceed the standards required in the BLM's *Standards and Guidelines for Rangeland Health* in Arizona. This RMP implements an adaptive management strategy. As BLM obtains new information, it will evaluate monitoring data and other resource information to periodically refine and update desired conditions and management strategies.

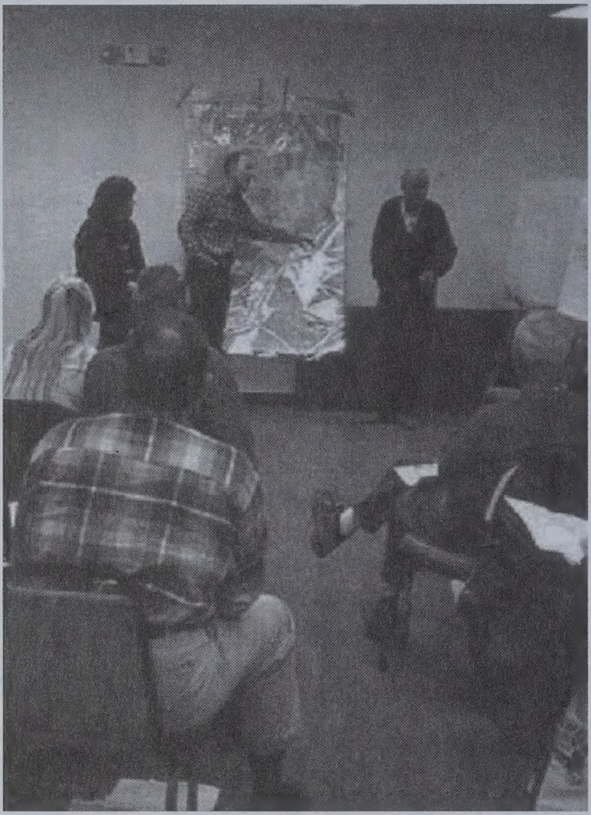
The Sonoita Valley Planning Partnership

This plan has been prepared using several of the outcomes of the Sonoita Valley Planning Partnership (SVPP). The SVPP is a voluntary association of federal, state, and local agencies, organizations and private citizens who share a common interest in the resources and management of the public lands within the Sonoita Valley, an area that includes the entire upper watershed of Cienega Creek. Appendix 2 describes the SVPP collaborative planning process and its outcomes in more detail.

Participants in the SVPP come from a variety of communities in southern Arizona including: Sonoita, Elgin, Patagonia, Huachuca City, Sierra Vista, Nogales, Tucson, and Phoenix. Participants also represent organized groups including: conservation organizations; grazing and mining interests; hiking, bird-dog, mountain biking, and off-highway vehicle clubs. Agency representation has come from the BLM; Nogales and Sierra Vista Ranger Districts of Coronado National Forest; Natural Resources Conservation Service (NRCS); U.S. Geological Survey (USGS); Arizona Game and Fish Department (AGFD); Arizona State Land Department (ASLD); Pima County Parks and Recreation and Planning/Flood Control; and Santa Cruz County. The partnership is open to all. Anyone can participate and join at any time.

The SVPP was conceived as a way for the community (private, public, government, local, non-local) to come together to resolve local and national issues affecting public lands in the Sonoita Valley. The partnership has increased awareness, communication, understanding, trust and support among its members. The partnership has also helped the community, including BLM, to look at the valley as a whole and determine what it needs in the future.

The SVPP developed a vision, goals, and resource objectives for the Sonoita Valley area (roughly the Upper Cienega Creek basin and small portions of the Upper Babocomari and Sonoita Creek basins) to be incorporated into planning efforts for the valley. As a participant in the planning partnership, BLM's Tucson Field Office has incorporated the vision, goals, and objectives as the foundation for the Las Cienegas RMP.



Vision Statement of the Sonoita Valley Planning Partnership

The SVPP will work together to perpetuate naturally functioning ecosystems while preserving the rural, grassland character of the Sonoita Valley for future generations.

Goals for the Sonoita Valley (Upper Cienega Creek Watershed)

1. Maintain and improve watershed health.
2. Maintain and improve native wildlife habitats and populations.
3. Maintain and restore native plant diversity and abundance.
4. Protect water quality.
5. Protect water quantity.
6. Assure sustainability and a complementary relationship of mineral resources to the protection of water quality and quantity.
7. Maintain the region's scenic beauty and open spaces.
    a. Protect the Empire-Cienega Planning Area and the integrity of public lands in the Sonoita Valley.
    b. Maintain the character of the Empire-Cienega Planning Area by limiting the building of any new roads or structures; maintaining the existing road system in its primitive character and condition; using existing road conditions to help control speed while providing sufficient recreational opportunities.
    c. Alter or upgrade existing roads where needed to protect natural resources on public lands in the Sonoita Valley.
    d. Encourage interaction and cooperation with other agencies and landowners, including acquiring land to protect and enhance the region's scenic beauty.
8. Sustain compatible traditional, current, and future use of the land.
    a. Ensure a range of outdoor recreation opportunities that will protect natural resources on all public lands in the Sonoita Valley.
    b. Develop and implement an education program to disseminate user guidelines that encourage responsible use of the public lands in the Sonoita Valley.
    c. Establish a Sonoita Valley trail system to promote dispersed recreation and minimize user conflicts.

   d. Plan, develop, and provide long-term stewardship of the Arizona Trail with community involvement. Priority should be given to developing alternative routes through the Empire-Cienega Planning Area from Oak Tree Canyon to Interstate Highway 10. Establish a primitive, non-motorized route for a diversity of users and provide outstanding opportunities for trail-based recreation.

9. Promote stewardship of the resources to accommodate current and future opportunities and demands.
   a. Encourage working partnerships between BLM and other agencies, users, groups, and interests.
   b. Develop maps, signs, and educational literature to promote user stewardship on public lands within the Sonoita Valley.

10. Manage the cultural resources in the planning area in a manner that provides for their preservation and protection and also avails selected properties for scientific, public, and sociocultural uses.

Chapters Five and Six of the proposed Las Cienegas RMP/FEIS provided details of the scoping, public meetings, mailings, coordination and consultation processes, and public review and comment periods for the Las Cienegas RMP/FEIS. Legal documents were published in the *Federal Register* consistent with BLM planning regulations and manuals.

Changes to the Proposed Las Cienegas RMP/Final EIS

The approved RMP is essentially the same as Alternative 2 in the Proposed Las Cienegas RMP/Final Environmental Impact Statement (PRMP/FEIS) that was published in June 2002. Only minor editorial modifications were made in preparing the RMP/ROD. These modifications corrected errors that were noted during review of Alternative 2 of the PRMP/FEIS and provide further clarification for some of the decisions. Appendix 3 is an errata sheet that identifies the location of the corrections in the PRMP/FEIS.

Throughout the Approved RMP/ROD, each decision has been labeled using a coded numbering system. The labels are located in parentheses following each decision. The first two letters in the label represent the resource the decision applies to. After the letters in the label are sequential numbers that follow the order that the decisions are listed in this document. This numbering system better lends itself to listing all the plan decisions in an automated database that could be linked to a Geographic Information System (GIS). The resource codes are defined in Appendix 4.

Protest Resolution

The Proposed RMP/FEIS was released on June 14, 2002, followed by a 30-day protest period. Only one protest was received to the PRMP/FEIS. The Director dismissed the protest on January 30, 2003 and concluded that the BLM Arizona State Director followed applicable procedures, laws, regulations, and policies and considered all relevant resource factors and public input in developing the Proposed RMP/Final EIS. As a result no substantial changes to the PRMP/FEIS were necessary.

Governor Consistency Review

The Governor consistency review period began on May 30, 2002. No inconsistencies with State or local plans, policies, or programs were identified during the Governor consistency review of the PRMP/FEIS.

Section 7 Consultation with the U.S. Fish and Wildlife Service (USFWS)

In April 2002, the BLM requested formal consultation with the USFWS on the endangered Southwestern willow flycatcher, endangered Gila topminnow, endangered Huachuca water umbel, endangered desert pupfish, endangered Canelo Hills ladies'-tresses, and the endangered lesser long-nosed bat based on BLM's determination that the proposed action in the RMP may affect and is likely to adversely affect these species. At the same time BLM requested a conference opinion on the Chiricahua leopard frog and Gila Chub. BLM requested concurrence that the proposed action was not likely to adversely affect the endangered Aplomado Falcon, and the endangered jaguar. BLM also determined that the proposed action would not affect the endangered cactus ferruginous pygmy owl. Further discussions between BLM and USFWS staff determined that the pygmy owl and Aplomado falcon should undergo formal consultation. In July 2002, BLM requested formal consultation on these two species. The USFWS issued a Biological Opinion in October 2002 (summarized in Appendix 5). In its Biological Opinion, USFWS determined that the proposed action in the Las Cienegas RMP is not likely to jeopardize the continued existence of the Southwestern willow flycatcher, Gila topminnow, Huachuca water umbel, desert pupfish, Canelo Hills ladies'-tresses, lesser long-nosed bat, cactus ferruginous pygmy-owl, and Aplomado Falcon and concurred that the proposed Las Cienegas RMP is not likely to adversely affect the jaguar. The Terms and Conditions of the Biological Opinion have been incorporated into the appropriate Management Action and Monitoring sections of the Approved RMP. These Terms and Conditions are denoted throughout this document with a number beginning with a "TC." Conservation Recommendations for each species are included in the Biological Opinion summary in Appendix 5 and may also be implemented as resources are available.

APPROVED RMP LEVEL DECISIONS

Desired Future Conditions

Land Health Standards

Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (*Standards and Guidelines*) were developed, pursuant to 43 CFR 4180, through a collaborative process involving BLM staff and the Arizona Resource Advisory Council (RAC) and were approved by the Secretary of the Interior in April of 1997. The *Standards and Guidelines* were developed to identify the characteristics of healthy ecosystems on public lands and the management actions that promote them. When approved, the *Standards and Guidelines* became Arizona BLM policy, guiding the planning for and management of BLM administered lands. *Arizona Standards and Guidelines*, therefore, have been incorporated into this Las Cienegas RMP. The following Arizona BLM Standards for Rangeland Health describe the conditions necessary to encourage proper functioning of ecological processes and are adopted as Land Health Standards that are applicable to Arizona BLM program-wide. The Guidelines for Grazing Administration are a series of management practices used to ensure that grazing activities meet the Standards. The Guidelines are incorporated into the RMP at the beginning of the Livestock Management Actions section.

Standard 1: Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site) (LH01).

Criteria for meeting Standard 1:

Soil conditions support proper functioning of hydrologic, energy, and nutrient cycles. Many factors interact to maintain stable soils and healthy soil conditions, including appropriate amounts of vegetative cover, litter, and soil porosity and organic matter. Under proper functioning conditions, rates of soil loss and infiltration are consistent with the potential of the site.

Ground cover in the form of plants, litter or rock is present in pattern, kind, and amount sufficient to prevent accelerated erosion for the ecological site; or ground cover is increasing as determined by monitoring over an established period of time.

Signs of accelerated erosion are minimal or diminishing for the ecological site as determined by monitoring over an established period of time.

As indicated by such factors as:

Ground Cover
- litter
- live vegetation, amount and type (e.g., grass, shrubs, trees, etc.)
- rock

Signs of erosion
- flow pattern
- gullies
- rills
- plant pedestaling

Exceptions and exemptions (where applicable):

- None

Standard 2: Riparian-Wetland Sites

Riparian-wetland areas are in properly functioning condition (LH02).

Criteria for meeting Standard 2:

Stream channel morphology and functions are appropriate for proper functioning condition for existing climate, landform, and channel reach characteristics. Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows.

Riparian-wetland functioning condition assessments are based on examination of hydrologic, vegetative, soil and erosion-deposition factors. BLM has developed a standard checklist to address these factors and make functional assessments. Riparian-wetland areas are functioning properly as indicated by the results of the application of the appropriate checklist.

The checklist for riparian areas is in Technical Reference 1737-9 "Process for Assessing Proper Functioning Condition." The checklist for wetlands is in Technical Reference 1737-11 "Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas."

As indicated by such factors as:

- Gradient
- Width/depth ratio
- Channel roughness and sinuosity of stream channel
- Bank stabilization
- Reduced erosion
- Captured sediment
- Ground water recharge
- Dissipation of energy by vegetation

Exceptions and exemptions (where applicable):

- Dirt tanks, wells, and other water facilities constructed or placed at a location for the purpose of providing water for livestock and/or wildlife and which have not been determined through local planning efforts to provide for riparian or wetland habitat are exempt.

- Water impoundments permitted for construction, mining, or other similar activities are exempt.

Standard 3: Desired Resource Conditions

Productive and diverse upland and riparian-wetland plant communities of native species exist and are maintained (LH03).

Criteria for meeting Standard 3:

Upland and riparian-wetland plant communities meet desired plant community objectives. Plant community objectives are determined with consideration for all multiple uses. Objectives also address native species, and the requirements of the Taylor Grazing Act, FLPMA, Endangered Species Act, Clean Water Act, and appropriate laws, regulations, and policies.

Desired plant community objectives will be developed to assure that soil conditions and ecosystem function described in Standards 1 and 2 are met. They detail a site-specific plant community, which when obtained, will assure rangeland health, State water quality standards, and habitat for endangered, threatened, and sensitive species. Thus, desired plant community objectives will be used as an indicator of ecosystem function and rangeland health.

As indicated by such factors as:

- Composition
- Structure
- Distribution

Exceptions and exemptions (where applicable):

- Ecological sites or stream reaches on which a change in existing vegetation is physically, biologically, or economically impractical.

Desired Resource Objectives for the Sonoita Valley (Upper Cienega Creek Watershed)

Watershed: Upland, Riparian and Aquatic Management

Manage public lands to achieve and maintain the following desired resource objectives for upland vegetation, riparian vegetation, and aquatic habitats developed through the SVPP:

1. *Watershed and Upland Vegetation Objectives*

   The watershed and upland vegetation objectives cover the National Resources Conservation Service (NRCS) ecological sites within the Sonoita Valley (Major Land Resource Area D-41-3 Southern Arizona Semidesert Grassland, 12-16 inch precipitation zone; and D-41-1 Mexican Oak-Pine Woodland and Oak Savannah, 16-20 inch precipitation zone (See page A3-10 in Appendix 3 of the PRMP/FEIS for more information on ecological sites).

   a. Desired Plant Communities--Maintain or achieve properly functioning upland condition and a high similarity index (> 50%, by weight) to the historic climax plant community present on the site on 80% or more of the ecological sites in the Sonoita Valley by the year 2015. (WS01)

   b. Desired Ground Cover--Maintain or achieve the following ground cover on 80% or more of the ecological sites in the Sonoita Valley by the year 2015: Within Major Land Resource Areas 41-1 and 41-3, maintain or achieve ground cover in woodland communities in excess of 60% (<40% exposed soil surface), in grassland communities in excess of 70% (<30% exposed soil surface), and in shrubland communities in excess of 40% (<60% exposed soil surface). (WS02)

2. *Riparian Vegetation Objective*

   Maintain or achieve properly functioning condition (PFC) and the potential natural vegetation community (PNC) (as described below) for 80% of the riparian areas in the Sonoita Valley.

   On BLM lands within the Empire-Cienega Planning Area, the objectives are to achieve and maintain PFC on 100% of the riparian areas by 2005 and achieve and maintain PNC (as described below) on 95% of the riparian areas by 2010. (WS03)

   Riparian Potential Natural Community Descriptions:

   a. Cienegas (valley bottom streams)--Along Upper Cienega Creek, achieve and maintain a vegetation community in cienegas with the following conditions:

      - Ground cover and protective roots > 90% on upper and lower banks.
      - Marsh habitat >50% of the total aquatic habitat in key cienega riparian segments.
      - Vegetation community on lower banks dominated by rushes, sedges, deer grass, and willows (i.e., *Juncus, Scirpus*, *Eleocharis*, *Carex*, *Muhlenburgia*, *Salix*).

- Upper banks and floodplain dominated by sacaton, yerba mansa, cottonwood, willow, and mesquite.

b. Cienegas (valley bottom ponds)--In the historic floodplain of Cienega Creek, achieve and maintain a vegetation community in valley bottom ponds with the following conditions:

- Ground cover > 90% on banks.
- Emergent vegetation covering 75% or more of the perimeter of the aquatic habitat.
- Vegetation community on banks dominated by rushes, sedges, deer grass, and willows (i.e., *Juncus*, *Scirpus*, *Eleocharis*, *Carex*, *Muhlenburgia*, *Salix*).
- Adjacent vegetation dominated by sacaton, paspalum grass, and yerba mansa. Dominated means that < 20% in aggregate of the plant community consists of other species (e.g., seep willow, Bermuda grass, knot grass, upland herbaceous annuals, or cattail).

c. Deciduous Woody Riparian (riparian areas with perennial surface water)--Along Lower Cienega Creek (below Mattie Canyon), achieve and maintain the following:

- A tree community dominated by Goodding willow on lower banks or in aquatic habitat.
- Trees on upper banks to include yew willow, Fremont cottonwood, velvet ash, and Arizona black walnut.
- A good mix of all age classes of riparian trees.
- Lower banks to be dominated by rushes, sedges, seedling riparian trees, and deer grass with bank cover exceeding 90%.
- Upper banks to be dominated by deer grass, sacaton grass, and riparian trees of sapling and adult age classes.

d. Deciduous woody riparian (riparian areas with free subsurface water)–Maintain a tree community composed of any of the following tree species according to the existing site's potential: Goodding willow, yew willow, Arizona black walnut, Fremont cottonwood, sycamore, seep willow, alder, box elder, and velvet ash. In addition, lower banks will be dominated by rushes, sedges, seedling riparian trees, and deer grass. If tamarisk is present, it is only a minor component of the riparian tree community.

3. *Aquatic Habitat Objective*

Provide a diversity and high quality of aquatic habitats to maintain and enhance the viability of the existing native fish community and other aquatic species within the Cienega Creek portion of the Sonoita Valley ecosystem by meeting or exceeding values for aquatic habitat parameters shown in Table 2 within key segments by 2010 or within 3 years after a major flood. (WS04)

Fish and Wildlife Management

Manage public lands to achieve and maintain the following desired resource objectives for fish and wildlife developed through the SVPP:

1. *Fish and Wildlife Management Objective*

Restore and maintain the native diversity, natural distribution, and abundance of fish and wildlife species in the Sonoita Valley, with sufficient resources and in a manner that perpetuates naturally functioning ecosystem processes by the following (WF01):

- Allowing for a mosaic of habitats.

Table 2. Pool Habitat and Cover Requirements for Selected Segments in Cienega Creek

Segment Name	Minimum Pool Features: Total Number per mile	Minimum Pool Features: Number >2' Deep	Minimum Pool Features: Areal Extent (%)	Minimum Instream Cover (ft²/mile)	Minimum Overhanging Cover (ft²/mile)	Minimum Monthly Flow (cfs)
Source ➜ Springwater Canyon	70	40	35	10,000	4,000	0.2 (June)
Springwater Canyon ➜ Coldwater Spring	100	40	50	4,000	4,000	Unknown
Coldwater Spring ➜ Confluence Mattie Canyon	N/A	N/A	80	4,000	4,000	Unknown
Confluence Mattie Canyon➜ Pump Canyon	100	40	50	4,000	4,000	0.7 (June)
Pump Canyon ➜ Narrows	100	40	50	4,000	4,000	Unknown

- Minimizing habitat fragmentation.
- Allowing for waters appropriate to ecosystem capacity.
- Minimizing restrictions to movement.
- Reestablishing, extending the range, or supplementing populations.
- Implementing recovery plans.
- Supporting research efforts.

2. *Upland Wildlife Habitat Sub-Objective A:*

On loamy bottom ecological sites, provide habitat for breeding grasshopper and wintering Baird's sparrows in the Sonoita basin by maintaining the following (WF02):

- An average of 6-8" grass height.
- Ground cover of live grasses and grass litter >75%.
- Less than 10% shrub canopy on two-thirds of the loamy bottom (swales) range sites that are sampled each year.

3. *Upland Wildlife Habitat Sub-Objective B:*

On open grasslands and in draws in the semidesert grassland and oak savannah vegetation communities (e.g., loamy bottom swales, loamy hills, and limy slopes ecological sites) provide the following habitat components for pronghorn fawning at key monitoring sites (WF03):

- Maintaining vegetation cover 10-18 inches high during the fawning season from the beginning of April through June each year in key fawning areas.
- Maintaining the presence of five or more species of grasses and shrubs in the vegetation communities.
- Limiting trees to no more than 5% of the total cover.

- Maintaining scattered trees greater than 12 feet tall in the habitat.
- Ensuring usable water within 1 mile of key fawning areas.

4. Use an ecosystem approach to manage the four rare habitats (i.e., grassland, riparian/wetland, mesquite bosque, and oak woodland) that support the following priority species (WF04):

Fish
Gila topminnow (T&E)
Gila chub (federal candidate)
Longfin dace

Amphibians and Reptiles
Lowland leopard frog
Chiricahua leopard frog (T&E)
Mexican garter snake

Birds
Southwestern willow flycatcher (T&E)
Yellow billed cuckoo (key riparian species)
Gray hawk (key raptor species)
Baird's sparrow (key grassland sparrow)
Botteri's sparrow (key sacaton species)

Mammals
Jaguar (T&E)
Lesser long-nosed bat (T&E)
Pronghorn (desirable big game and watchable wildlife species)
Mule deer (desirable big game species)
White-tailed deer (desirable big game species)
Javelina (desirable big game species)

Plants
Huachuca water umbel (T&E)

Cultural Resource Management

Manage public lands to achieve and maintain the following desired resource objectives for cultural resources developed through the SVPP:

1. *Cultural Resources Management Objective*

Manage the planning area's cultural resources to realize or protect their scientific information potential, their educational, recreational and traditional values, their usefulness as subjects for experimental studies, and their qualities requiring conservation for the future. To meet this objective, the planning area's cultural resources will be allocated among six established use categories (CL01):

- Scientific Use
- Conservation Use
- Traditional Use
- Public Use
- Experimental Use
- Discharged From Management

2. *Cultural Resources Sub-Objective A: Empire Ranch Headquarters*

Preserve and adaptively reuse the Empire Ranch Headquarters for public benefit without diminishing the historically significant buildings and setting by doing the following (CL02):

- Evaluating and nominating structures and buildings for listing on *the National Register of Historic Places*.
- Stabilizing and maintaining historic structures in accordance with the Secretary of the *Interior's Standards and Guidelines for Rehabilitating Historic Buildings*

- Designing and implementing adaptive uses of the headquarters for an array of compatible educational, research, interpretive and administrative programs.
- Continuing the traditional use of the headquarters to support management of the surrounding lands.
- Maintaining the headquarters development and usage at levels compatible with maintaining desired resource conditions for the surrounding lands.

3. *Cultural Resource Uses*

Manage the historically significant buildings of the Empire Ranch Headquarters for public use (CL03).

Manage selected cultural properties outside the ranch headquarters area for scientific, conservation and public use. As data are collected, some properties and sites may be allocated to experimental use or discharged from management (CL04).

Work with Native Americans to select harvesting areas for noncommercial collection of indigenous plants (CL05).

Recreation Management

Manage public lands to achieve and maintain the following desired resource objective for recreation opportunities developed through the SVPP:

1. *Recreation Objective*

Ensure a range of outdoor recreation opportunities to help meet existing and expected needs while protecting natural resources on all public lands in the Empire-Cienega Planning Area by doing the following (RR01):

- Establishing recreation opportunity zones and management standards that will enhance the spectrum of activities and settings.
- Developing and implementing a visitor education program to encourage responsible use of public lands in the Empire-Cienega Planning Area.
- Establishing an Empire-Cienega trail system as part of the Sonoita Valley trail system to allow motorized and non-motorized dispersed recreation.
- Maintaining and securing legal access to the Empire-Cienega portion of the Sonoita Valley trail system.

2. In accord with these desired recreation goals and objective, manage public lands to maintain the three recreation opportunity settings (Roaded Natural, Natural, and Back Country) on public lands as described in Table 3. (RR02)

The descriptions for Zones 0 (Rural) and Zone 4 (Primitive) are provided for reference. These zones occur in lands adjacent to the planning area in Sonoita and in the Mount Wrightston Wilderness, respectively.

Visual Resource Management

Designate 49,000 acres of public land as visual resource management (VRM) Class II (See Appendix 2 in the PRMP/FEIS for more detailed description of Visual Resource Management Class Objectives). (VR01)

Land Use Allocations

Under the approved plan, BLM makes the following land use allocations:

Fish and Wildlife Management

Manage suitable public land habitats for the recovery or reestablishment of native populations in collaboration with federal and state agencies, user groups, and other interested parties. Provide for the reintroduction of Gila topminnow into suitable habitats in accordance with the existing BLM-AGFD Memorandum of Understanding. In addition, provide for the reintroduction, or supplementation of the following endangered, threatened, candidate and priority species within suitable habitats in accordance with existing regulations, policies and agreements (WF05):

- Gila chub
- Desert pupfish
- Southwestern willow flycatcher
- Aplomado falcon
- Chiricahua leopard frog
- Lowland leopard frog
- Black-tailed prairie dog
- Beaver
- Pronghorn
- Gould's turkey

Wildland Fire Management

BLM will suppress natural or human-caused wildland fires by first addressing the safety concerns of firefighters and the public and then addressing resource concerns. Because of the planning area's small size, and the proximity of an increasing number of homes in the wildland-urban interface, BLM will manage unplanned ignitions for the benefit of resources only once public safety and property protection can be assured and in conformance with the RMP. Due to intermixed land ownership patterns, BLM will pursue development of and utilize a multi-agency fire management strategy in the planning area that will consider both ecological and administrative issues. (FM01)

Mineral Development

The planning area's 48,542 acres of acquired public lands remain closed to locatable and leasable mineral exploration and extraction (Map 2). (MI01)

Public lands acquired in the future within the planning area will be closed to locatable and leasable mineral exploration and extraction. (MI02)

In addition, BLM will take the following actions:

- Petition to withdraw 458 acres of public domain lands in the Empire Mountains. (MI03)

- Petition to withdraw 5,726.86 acres of federal mineral estate with private surface and 1,440.18 acres of federal mineral estate with state surface from locatable and leasable mineral exploration and extraction. (MI04)

- Not authorize mineral material sales on public lands in the planning area. (MI05)

Lands and Realty

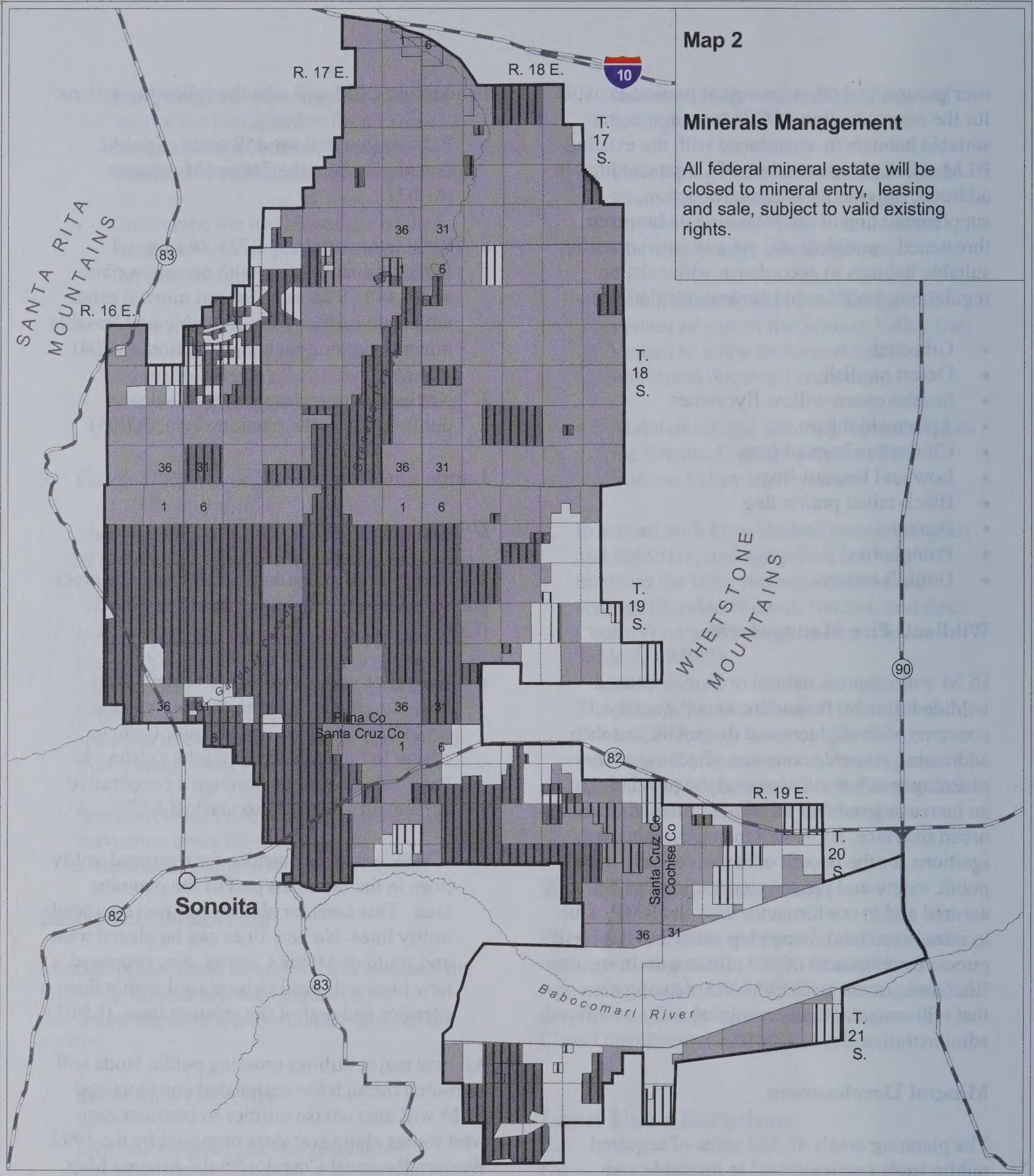
Utility Corridors

Two major utility corridors are designated across public lands in the planning area (See Map 3) (LR01):

- A 60-foot-wide corridor for buried utility lines running next to the existing privately owned El Paso Gas line corridor (with an option to tie into and within the existing El Paso private corridor through a cooperative agreement with El Paso Gas). (LR02)

- A 500-foot-wide corridor for overhead utility lines in the northeast part of the planning area. This corridor already has two overhead utility lines. No new lines can be placed west and south of Mattie Canyon. Any proposed new lines will need to be placed within this corridor and east of the existing lines. (LR03)

All new major utilities crossing public lands will be routed through the designated corridors and BLM will also advise utilities to consider east-west routes along corridors proposed by the 1992 Western Regional Corridor Study-Arizona Map, as revised. Because of the configuration of the public land corridors and presence of intermixed State Trust lands, the utility will also need to apply for and obtain a right-of-way from the ASLD. (LR04)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SANTA RITA MOUNTAINS
WHETSTONE MOUNTAINS
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Pima Co
Santa Cruz Co
Cochise Co
Sonoita
Babocomari River

Map 2

Minerals Management

All federal mineral estate will be closed to mineral entry, leasing and sale, subject to valid existing rights.

LAS CIENEGAS RESOURCE MANAGEMENT PLAN

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LEGEND

- Planning Area Boundary
- ▨ BLM Land
- ▨ State Land
- ☐ Private Land
- ▥ Federal Minerals, Not Open to Entry

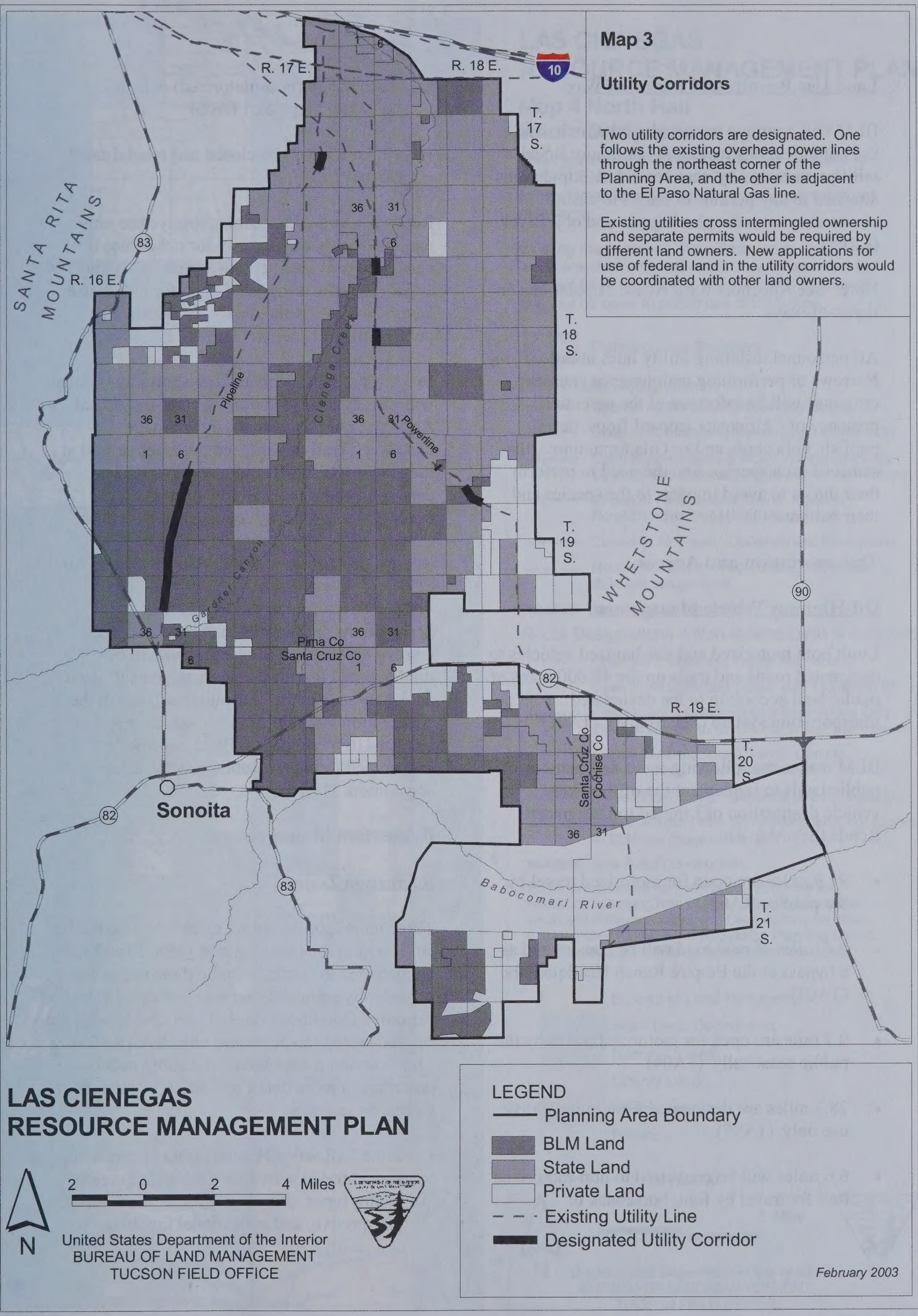
February 2003

Map 3

Utility Corridors

Two utility corridors are designated. One follows the existing overhead power lines through the northeast corner of the Planning Area, and the other is adjacent to the El Paso Natural Gas line.

Existing utilities cross intermingled ownership and separate permits would be required by different land owners. New applications for use of federal land in the utility corridors would be coordinated with other land owners.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Gardner Canyon
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Santa Cruz Co
82
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Santa Cruz Co
Cochise Co
Sonoita
Babocomari River
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LAS CIENEGAS RESOURCE MANAGEMENT PLAN

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LEGEND
— Planning Area Boundary
▨ BLM Land
▨ State Land
☐ Private Land
- - - Existing Utility Line
▬ Designated Utility Corridor

February 2003

Land Use Permits and Rights-of-Way

BLM will continue to consider other new land use authorizations including non-major lineal utilities on a case-by-case basis with stipulations attached to any permits or leases to ensure consistency with the plan's goals and objectives. (LR05)

Note: See Appendix 6 for ACEC stipulations on rights-of-ways.

All personnel installing utility lines at the Narrows or performing maintenance at creek crossings will be informed of the potential presence of Chiricahua leopard frogs, desert pupfish, Gila chub, and/or Gila topminnow, the status of each species, and the need to perform their duties to avoid impacts to the species and their habitats. (TC01)

Transportation and Access

Off-Highway Vehicle Management

Limit both motorized and mechanized vehicles to designated roads and trails on the 49,000 acres of public land according to the designated transportation system (See Map 4). (TA01)

BLM makes the following route designations on public lands to implement the off-highway vehicle designation of Limited to Designated Roads (See Map 4):

- 91.9 miles are open for motorized travel by the public. (TA02)
- 0.4 miles of new road will be constructed as a bypass at the Empire Ranch Headquarters. (TA03)
- 0.7 mile are open for motorized travel by the public seasonally. (TA04)
- 28.7 miles are designated for administrative use only. (TA05)
- 6.6 miles will be converted to non-motorized trail for travel by foot, horseback or mechanized (non-motorized) vehicles including bicycles. (TA06)
- 13.7 miles will be closed and rehabilitated. (TA07)

Roads designated for administrative use only may be opened temporarily for public use if needed to provide alternate access. This may occur if a route designated open for public use has to be closed temporarily for resource or public safety concerns. (TA08)

In addition, the designated transportation system will also include 11.6 miles of non-motorized Arizona Trail (see below), the Heritage Discovery Trail (a hardened interpretive trail at the Empire Ranch Headquarters, which is described under the Cultural Resource Management Actions section), and the North Canyon non-motorized trail described in Recreation Management Actions section. (TA09)

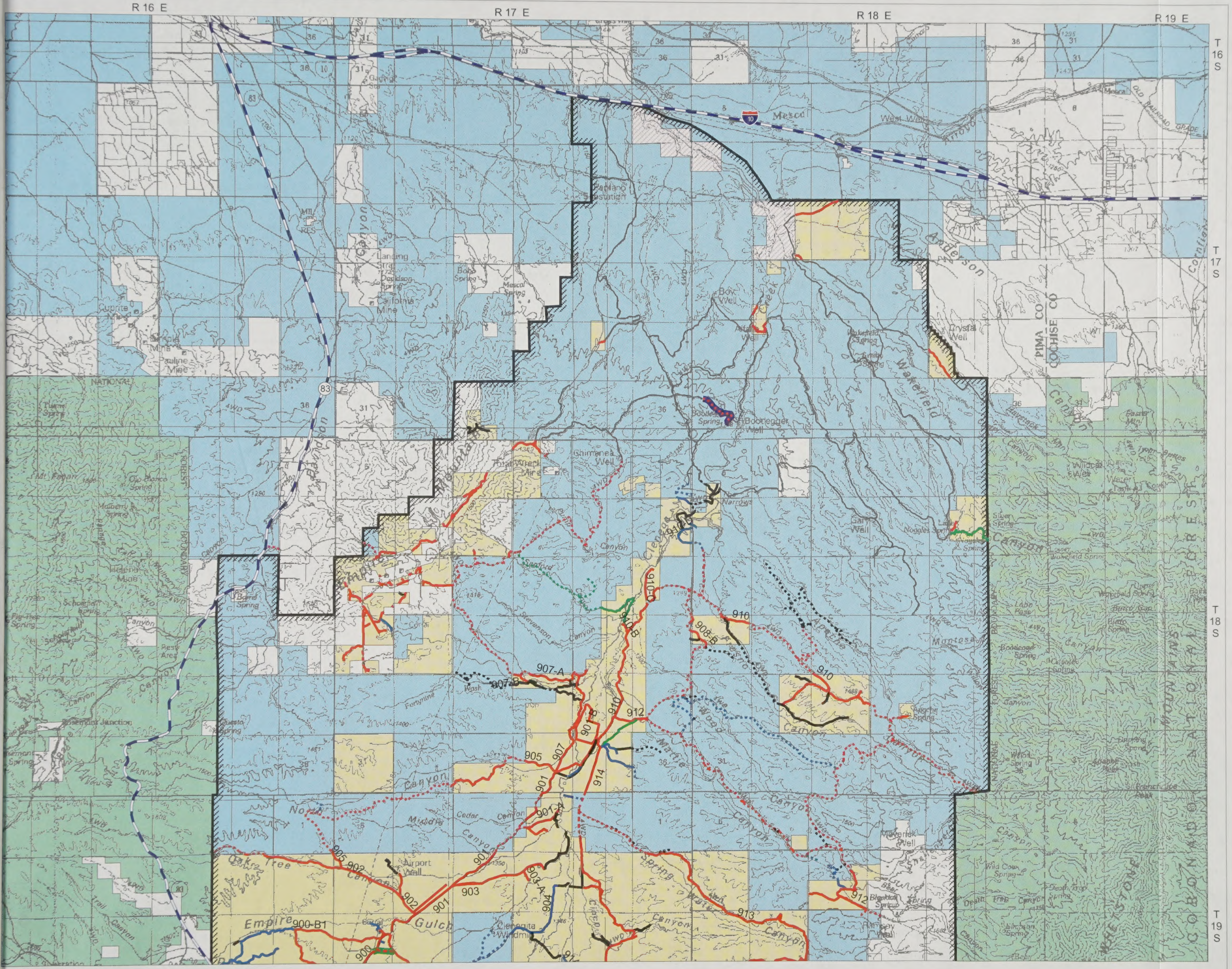
For lands acquired in the future, road designations on intermixed non-BLM lands (shown on Map 4 as dashed lines) will be implemented for consistent management. Route designations on other surrounding lands in the Acquisition Planning District, which may be acquired in the future by BLM, will be determined through a public process after acquisition. (TA10)

Recreation Management

Recreation Zones

Three recreation zones are established on public lands within the planning area (Map 5) and will be managed to conform to the three recreation opportunity settings described in Table 3 (Desired Resource Conditions) and in accordance with the desired recreation goals and objective (RR03). The Recreation Management Actions section describes in more detail recreation management within these zones.

- Zone 1 (Roaded Natural) offers developed, concentrated activities for a wide range of visitor types. It has easy access and visitor, interpretive, and educational facilities. It



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West Well
Pantano Station
Anderson
Bow Well
Crystal Well
Wakefield
PIMA CO
COCHISE CO
Bootlegger Spring
Bootlegger Well
Shiriness Well
Narrows
Cienega
Canyon
Gardner Canyon
Nogales Spring
Wakefield Spring
Mattie Canyon
Cedar Canyon
Middle Canyon
North Canyon
Oak Tree Canyon
Empire Gulch
Airport Well
Cieneguita Windmill
Spring Water Canyon
Maverick Well
Bluewater Spring
Cottonwood Canyon
Mescal Spring
California Mine
Cuprite Mine
Stevenson Canyon
Fortynine Wash
Rosemont Junction
WHETSTONE MOUNTAINS
CORONADO NATIONAL FOREST
83
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901-B
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907-A
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912
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LAS CIENEGAS RESOURCE MANAGEMENT PLAN

Map 4 North Half Route Designations

This map shows the use designations pursuant to 43 CFR 8342 for routes on BLM administered lands to provide access and meet resource management objectives.

Existing roads across State Trust lands and private lands are shown for reference only. These routes may not have legal public access and they may or may not be open to public use in the future.

▨ Planning Area Boundary

BLM Route Designations:

- — Open to All Motorized Travel Year-Round
- — Open to All Motorized Travel: July 1 to March 31
- — Open to Administrative Motor Vehicle Use Only. Open to Non-Motorized Public Travel Year-Round
- — Closed to All Motorized Travel. Open to Non-Motorized Travel Year-Round
- — Closed to All Travel. Obliterate and Revegetate.
- — Routes Across Non-Federal land, not subject to BLM use designations.
- — New Road Construction

Route Designations if Non-federal Land is Acquired:

- ┄ Open to All Motorized Travel Year-Round
- ┄ Open to All Motorized Travel: July 1 to March 31
- ┄ Open to Administrative Motor Vehicle Use Only. Open to Non-Motorized Public Travel Year-Round
- ┄ Closed to All Motorized Travel. Open to Non-Motorized Travel Year-Round
- ┄ Closed to All Travel. Obliterate and Revegetate.
- — Routes Across Other Non-Federal land, not subject to BLM use designations.
- — New Road Construction

Route designations for non-Federal lands are for reference, showing how BLM would designate these when and if they are acquired. Designations for other undesignated routes in the Acquisition Planning District would be through a public process after acquisition.

- 🟨 Bureau of Land Management
- 🟦 State Land Department
- 🟩 National Forest
- ▨ County Land
- 🟫 Military Land
- ⬜ Private

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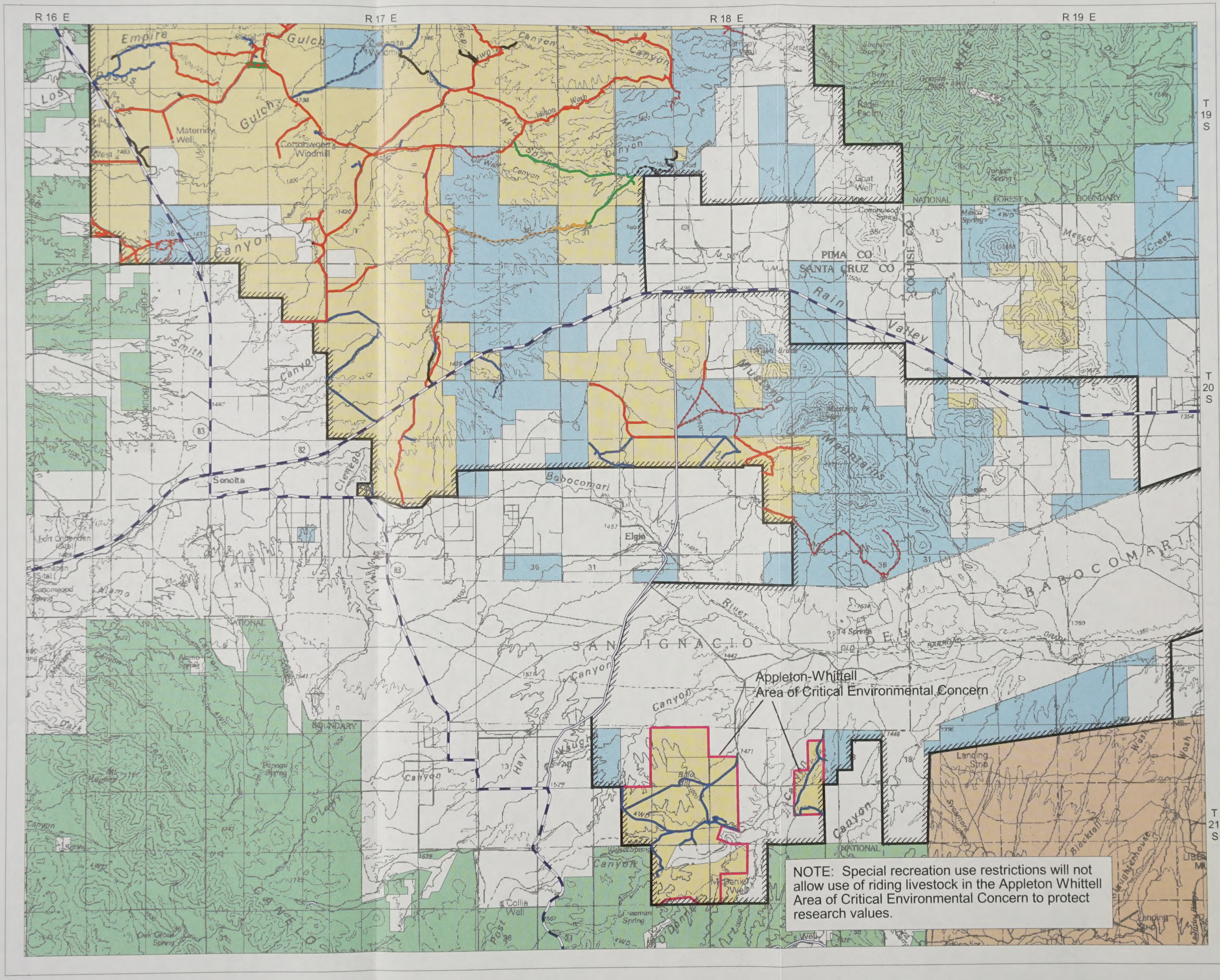
February 2003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Empire Gulch
Los Posos
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Mud Spring Canyon
Hilton Wash
Cienega Creek
Smith Canyon
Sonoita
Elgin
Fort Crittenden
Babocomari
PIMA CO
SANTA CRUZ CO
COCHISE CO
Rain Valley
Mustang Mountains
Mescal Creek
Goat Well
Cottonwood Spring
NATIONAL FOREST BOUNDARY
Radio Facility
Whetstone
Babocomari River
SAN IGNACIO DEL BABOCOMARI
Alamo Canyon
Canelo
Lyle Canyon
O'Donnell Canyon
Post Canyon
Collie Well
Hay Canyon
Landing Strip
Appleton-Whittell
Area of Critical Environmental Concern

NOTE: Special recreation use restrictions will not allow use of riding livestock in the Appleton Whittell Area of Critical Environmental Concern to protect research values.

LAS CIENEGAS RESOURCE MANAGEMENT PL

Map 4 South Half Route Designations

This map shows the use designations pursuant to 43 CFR 8342 for routes on BLM administered lands to provide access and meet resource management objectives.

Existing roads across State Trust lands and private lands are shown for reference only. These routes may not have legal public access and they may or may not be open to public use in the future.

▨ Planning Area Boundary

BLM Route Designations:

- — Open to All Motorized Travel Year-Round
- — Open to All Motorized Travel: July 1 to March
- — Open to Administrative Motor Vehicle Use Onl Open to Non-Motorized Public Travel Year-Ro
- — Closed to All Motorized Travel. Open to Non-Motorized Travel Year-Round
- — Closed to All Travel. Obliterate and Revegeta
- — Routes Across Non-Federal land, not subject BLM use designations.
- ▬ New Road Construction

Route Designations if Non-federal Land is Acq

- ⋯ Open to All Motorized Travel Year-Round
- ⋯ Open to All Motorized Travel: July 1 to March
- ⋯ Open to Administrative Motor Vehicle Use Onl Open to Non-Motorized Public Travel Year-Ro
- ⋯ Closed to All Motorized Travel. Open to Non-Motorized Travel Year-Round
- ⋯ Closed to All Travel. Obliterate and Revegeta
- — Routes Across Other Non-Federal land, not su to BLM use designations.
- ▬ New Road Construction

Route designations for non-Federal lands are for reference, showing how BLM would designate these when and if they are acquired. Designations for other undesignated routes in the Acquisition Planning District would be through a public process after acquisition.

- 🟨 Bureau of Land Management
- 🟦 State Land Department
- 🟩 National Forest
- ▨ County Land
- 🟫 Military Land
- ☐ Private

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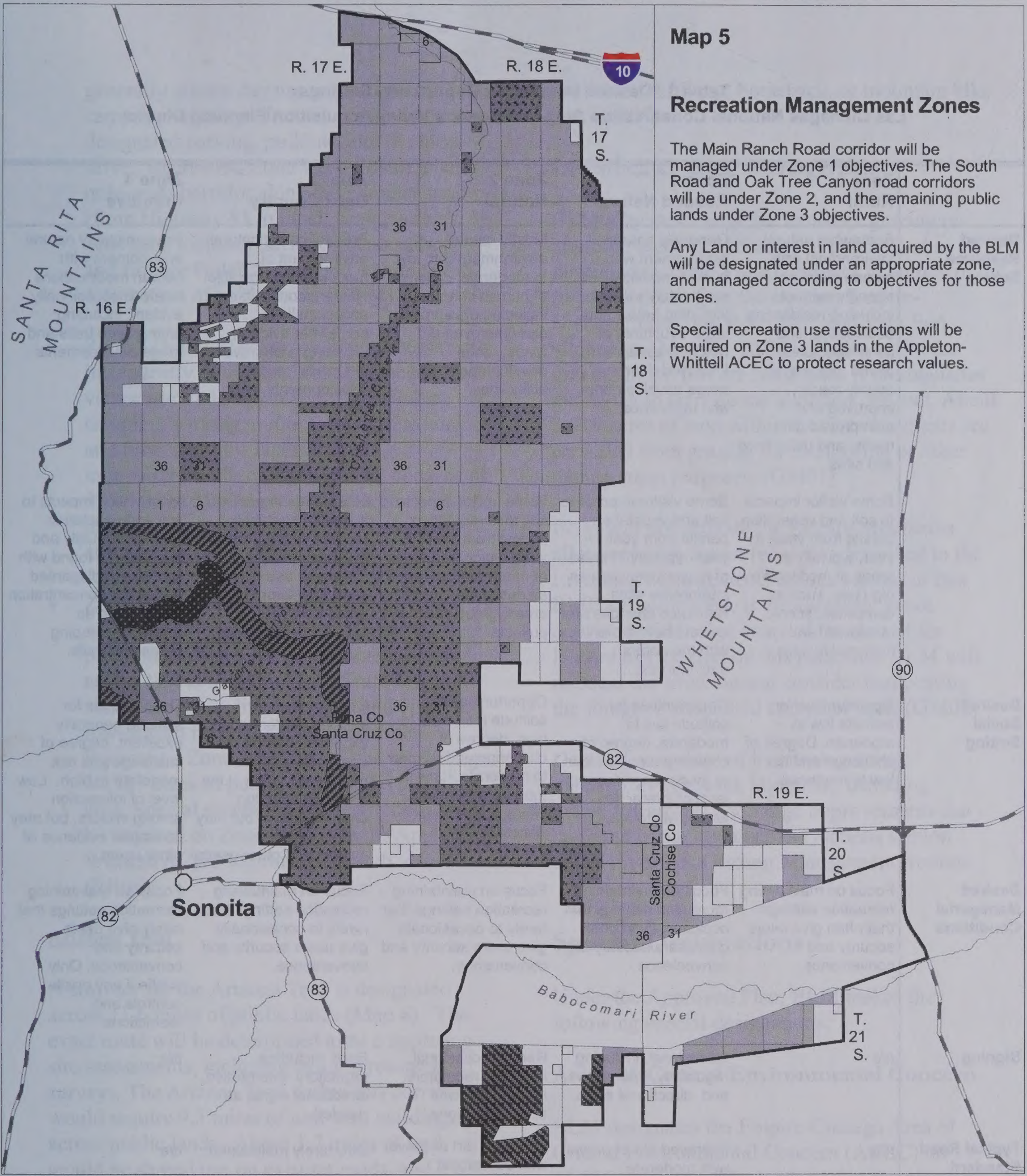

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SANTA RITA MOUNTAINS
WHETSTONE MOUNTAINS
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Cochise Co
Sonoita
Babocomari River
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Map 5

Recreation Management Zones

The Main Ranch Road corridor will be managed under Zone 1 objectives. The South Road and Oak Tree Canyon road corridors will be under Zone 2, and the remaining public lands under Zone 3 objectives.

Any Land or interest in land acquired by the BLM will be designated under an appropriate zone, and managed according to objectives for those zones.

Special recreation use restrictions will be required on Zone 3 lands in the Appleton-Whittell ACEC to protect research values.

LAS CIENEGAS RESOURCE MANAGEMENT PLAN

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LEGEND

— Planning Area Boundary

■ BLM Land
▒ State Land
□ Private Land
▦ Zone 1
▨ Zone 2
░ Zone 3
▧ Special Restriction Area

February 2003

Table 3. Desired Recreation Opportunity Settings
Las Cienegas National Conservation Area and Sonoita Valley Acquisition Planning District

	Zone 0 **Rural**	**Zone 1** **Roaded Natural**	**Zone 2** **Natural**	**Zone 3** **Back Country**	**Zone 4** **Primitive**
Desired Resource Setting	Somewhat natural environment with human changes strongly evident, including residences, businesses, and other structures; paved highways; county roads; improved and unimproved dirt roads; and utility lines and sites.	Generally natural environment with human modifications moderately evident, including house and other structures at ranch headquarters, improved dirt roads, range developments, and utility lines.	Mostly natural environment with low to moderate evidence of human changes, including unimproved and improved dirt roads, range developments, and utility lines.	Predominately natural environment of moderate to large size. Human modifications occasionally to somewhat evident, including unimproved dirt roads, range developments, and utility lines.	Predominately natural environment with human modifications rarely to occasionally evident, including unimproved trails and range developments .
	Some visitor impacts to soil and vegetation persist from year- to-year, typically in areas of moderate to high use, such as campsites, scenic overlooks, and interpretive sites.	Some visitor impacts to soil and vegetation persist from year-to-year, typically in areas of higher use, such as interpretive sites. Resource changes are evident but harmonious with the natural environment.	Some visitor impacts to soil and vegetation persist from year- to-year, typically in areas of moderate use, such as designated camping areas, group sites, and pullouts.	Most visitor impacts to soil and vegetation recover yearly, typically in areas of light and dispersed use such as desirable camping areas and trails.	Most visitor impacts to soil and vegetation recover annually and are typically found with light use in dispersed recreation concentration areas, such as desirable camping areas and trails.
Desired Social Setting	Opportunities for solitude low to moderate. Degree of challenge and risk low to moderate.	Opportunities for solitude low to moderate, degree of challenge and risk low to moderate. Moderate level of interaction among visitors.	Opportunities for solitude moderate to high, degree of challenge and risk low to moderate. Low to moderate level of interaction among visitors.	Opportunities for solitude moderate to excellent, degree of challenge and risk moderate to high. Low level of interaction among visitors, but may encounter some evidence of other users.	Opportunities for solitude generally excellent, degree of challenge and risk moderate to high. Low level of interaction among visitors, but may find minor evidence of other users.
Desired Managerial Conditions	Focus on maintaining recreation settings that often give users security and convenience.	Focus on maintaining recreation settings that occasionally to often give users security and convenience.	Focus on maintaining recreation settings that rarely to occasionally give users security and convenience.	Focus on maintaining recreation settings that rarely to occasionally give users security and convenience.	Focus on maintaining recreation settings that rarely give users security and convenience. Only subtle if any onsite controls and restrictions.
Signing	n/a	Occasional, including regulatory, interpretive, and directional signs.	Rare to occasional, including regulatory, interpretive, and directional signs.	Rare, including regulatory, interpretive, directional signs, as needed.	n/a
Typical Road Standard	n/a	Improved dirt or gravel with moderate maintenance.	Improved dirt or gravel with occasional maintenance.	Dirt, rarely maintained.	n/a
Degree of User Facilities Developed	n/a	Low to Moderate	Low	Very Low to None	n/a
Visitor Information (Type, Level, and Location)	n/a	Formal/Informal, Moderate, Onsite /Offsite	Informal, Low, Offsite	Informal, Low, Offsite	n/a

generally allows day use with no public camping. Motorized traffic is directed to use designated parking, pullouts, and the loop drive. Recreation Zone 1 consists of a half-mile-wide corridor along the entrance road (from Highway 83 to ranch headquarters). This zone includes the ranch headquarters and Empire Gulch Spring and encompasses 1,109 acres of public land. (RR04)

- Zone 2 (Natural) offers moderate access with infrequently maintained roads; concentrated visitor use in designated areas, including camping, parking, pullouts and group sites; and limited visitor facilities and interpretation. Recreation Zone 2 consists of 3,504 acres of public land, including half-mile-wide corridors along Oak Tree Canyon and South Roads. (RR05)

- Zone 3 (Back Country/Semi-Primitive) offers a low concentration of visitors and a predominately natural environment, variable access that is likely to be difficult, low to no visitor facilities, limited signs, and dispersed low-impact recreational opportunities. Recreation Zone 3 consists of the remaining 44,387 acres of public lands in the planning area. Special recreation use restrictions will be required on Zone 3 lands in the Appleton-Whittell ACEC to protect research values. (RR06)

Arizona Trail

A corridor for the Arizona Trail is designated across 11.6 miles of public lands (Map 6). The exact route will be determined after completing site assessments, including cultural resource surveys. The Arizona Trail within this corridor would require 9.3 miles of new trail building across public lands. About 1.7 miles of trail would be shared use on existing roads, and 0.6 miles would be converted from an abandoned road. To have a continuous trail, the corridor would also have to cross State Trust lands after leaving BLM-administered lands near Wood Canyon. For the trail to cross State Trust land, a right-of-way must be obtained from the ASLD. Except for the segment that is shared use, the Arizona Trail will be non-motorized and available for hiking, horseback, or mountain bike use. (RR07)

Livestock Grazing Management

BLM allocates forage for livestock grazing on approximately 42,155 acres of public land as described in Table 4 and continues to authorize livestock grazing on the existing Empire-Cienega, Empirita, Rose Tree, and Vera Earl allotments (Map 7). BLM will also authorize grazing in the Empire Mountains if prerequisites necessary to activate the allotment are met. About 3,919 acres of land within the five allotments are excluded from grazing for monitoring or other management purposes. (GM01)

BLM will not activate the Empire Mountains allotment until the prerequisites described in the Livestock Management Actions section of this RMP are completed. If the allotment is not activated within five years of the date of the Record of Decision on this plan, then BLM will reassess the situation and consider reallocating the forage to watershed and other uses. (GM02)

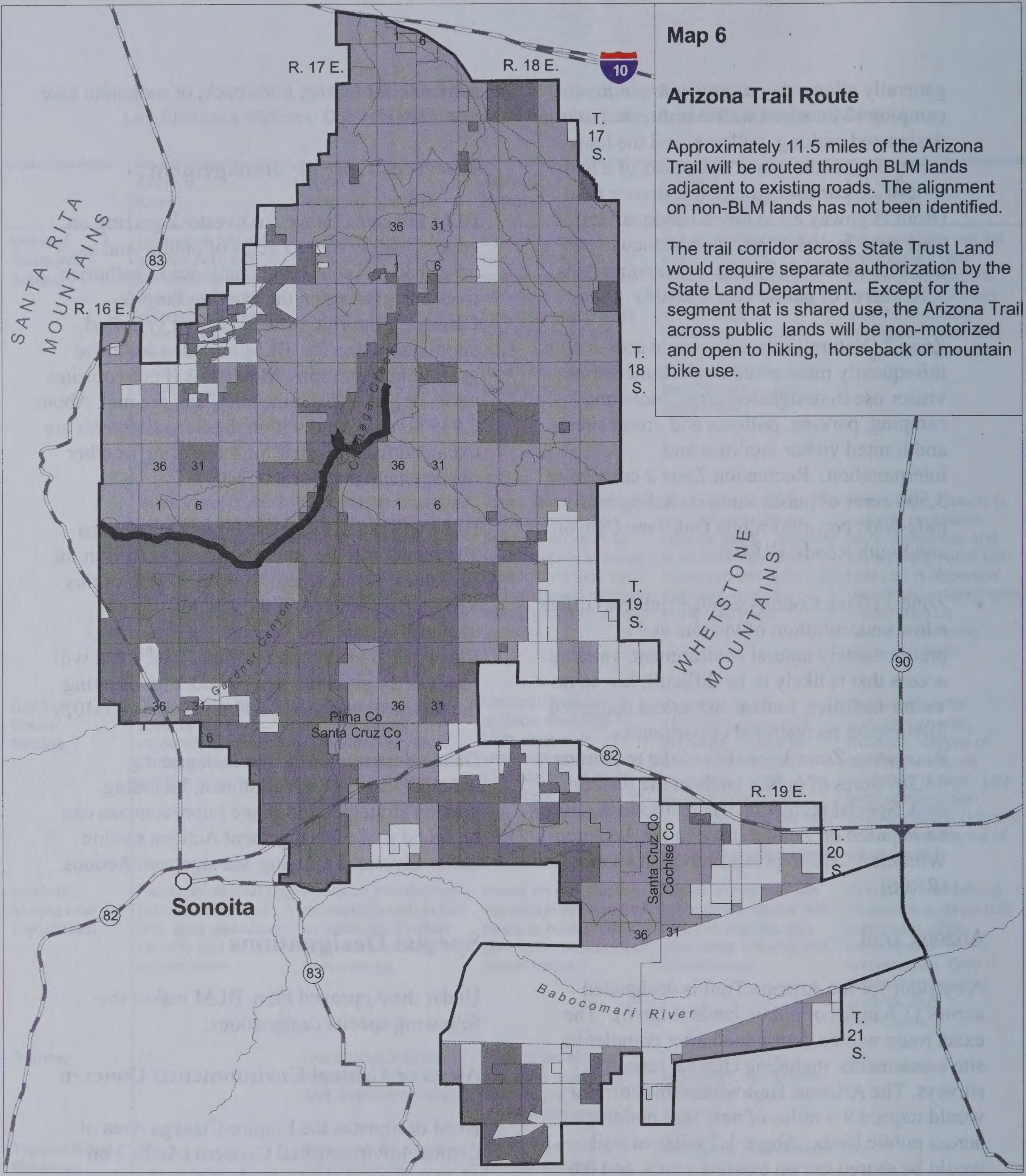
Detailed narratives of livestock grazing management for each allotment, including grazing strategies and range improvements can be found in the Management Actions section under Livestock Grazing Management Actions.

Special Designations

Under the Approved Plan, BLM makes the following special designations:

Areas of Critical Environmental Concern

BLM designates the Empire-Cienega Area of Critical Environmental Concern (ACEC) on 45,859 acres of public lands within the planning area (Map 8). This ACEC includes all of the planning area's public lands (SM01). Management objectives and actions for the ACEC are included in Appendix 6.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WHETSTONE MOUNTAINS
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Gardner Canyon
Pima Co
Santa Cruz Co
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Cochise Co
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Map 6

Arizona Trail Route

Approximately 11.5 miles of the Arizona Trail will be routed through BLM lands adjacent to existing roads. The alignment on non-BLM lands has not been identified.

The trail corridor across State Trust Land would require separate authorization by the State Land Department. Except for the segment that is shared use, the Arizona Trail across public lands will be non-motorized and open to hiking, horseback or mountain bike use.

LAS CIENEGAS RESOURCE MANAGEMENT PLAN

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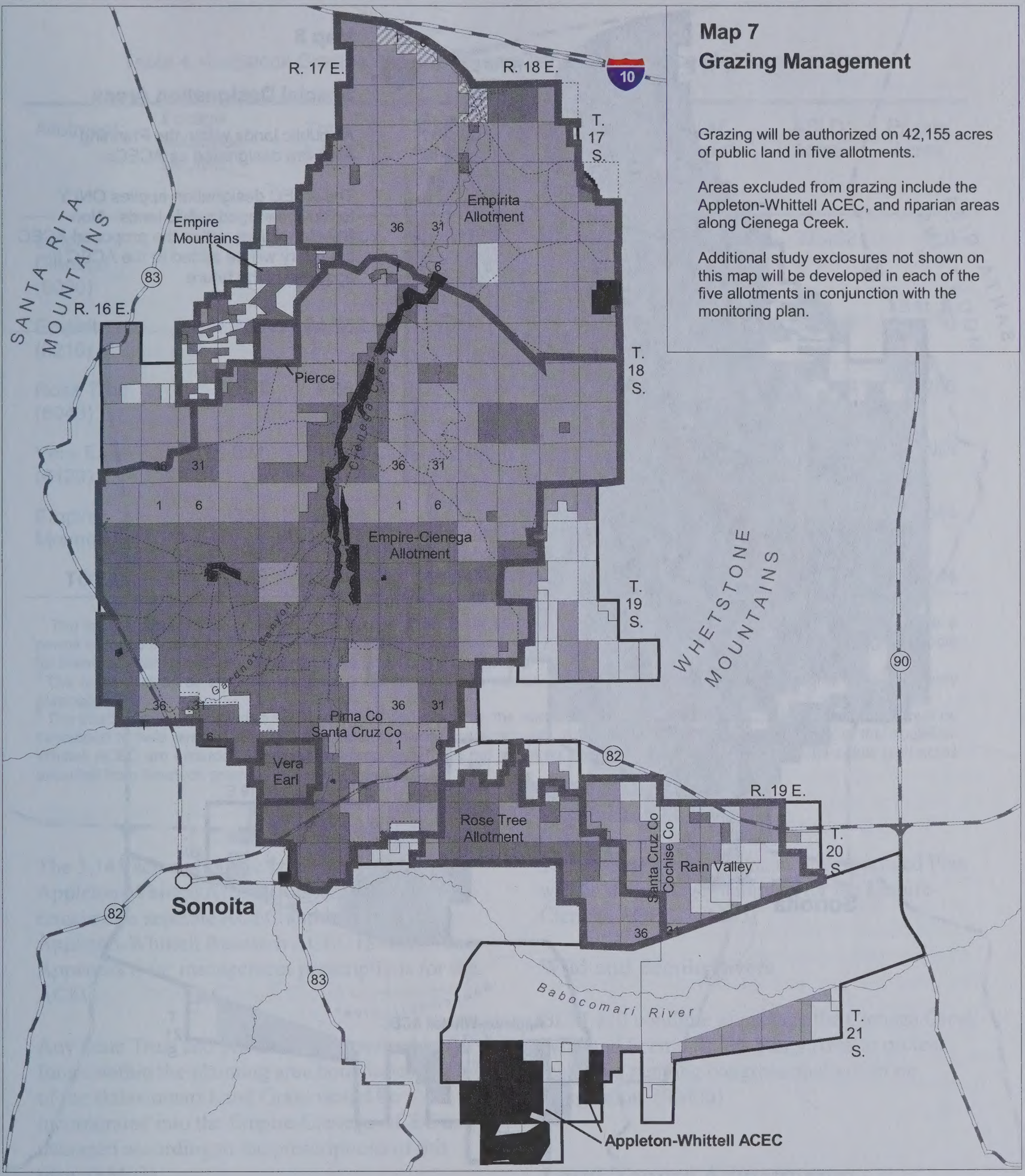
LEGEND
— Planning Area Boundary
▨ BLM Land
▨ State Land
☐ Private Land
— Existing Road
— Arizona Trail Route

February 2003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Rose Tree Allotment
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Cochise Co
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Appleton-Whittell ACEC

Map 7
Grazing Management

Grazing will be authorized on 42,155 acres of public land in five allotments.

Areas excluded from grazing include the Appleton-Whittell ACEC, and riparian areas along Cienega Creek.

Additional study exclosures not shown on this map will be developed in each of the five allotments in conjunction with the monitoring plan.

LAS CIENEGAS
RESOURCE MANAGEMENT PLAN

2 0 2 4 Miles

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LEGEND
— Planning Area Boundary
▨ BLM Land
▨ State Land
☐ Private Land
▭ Grazing Allotments
■ Grazing Excluded
┄ Existing Fences

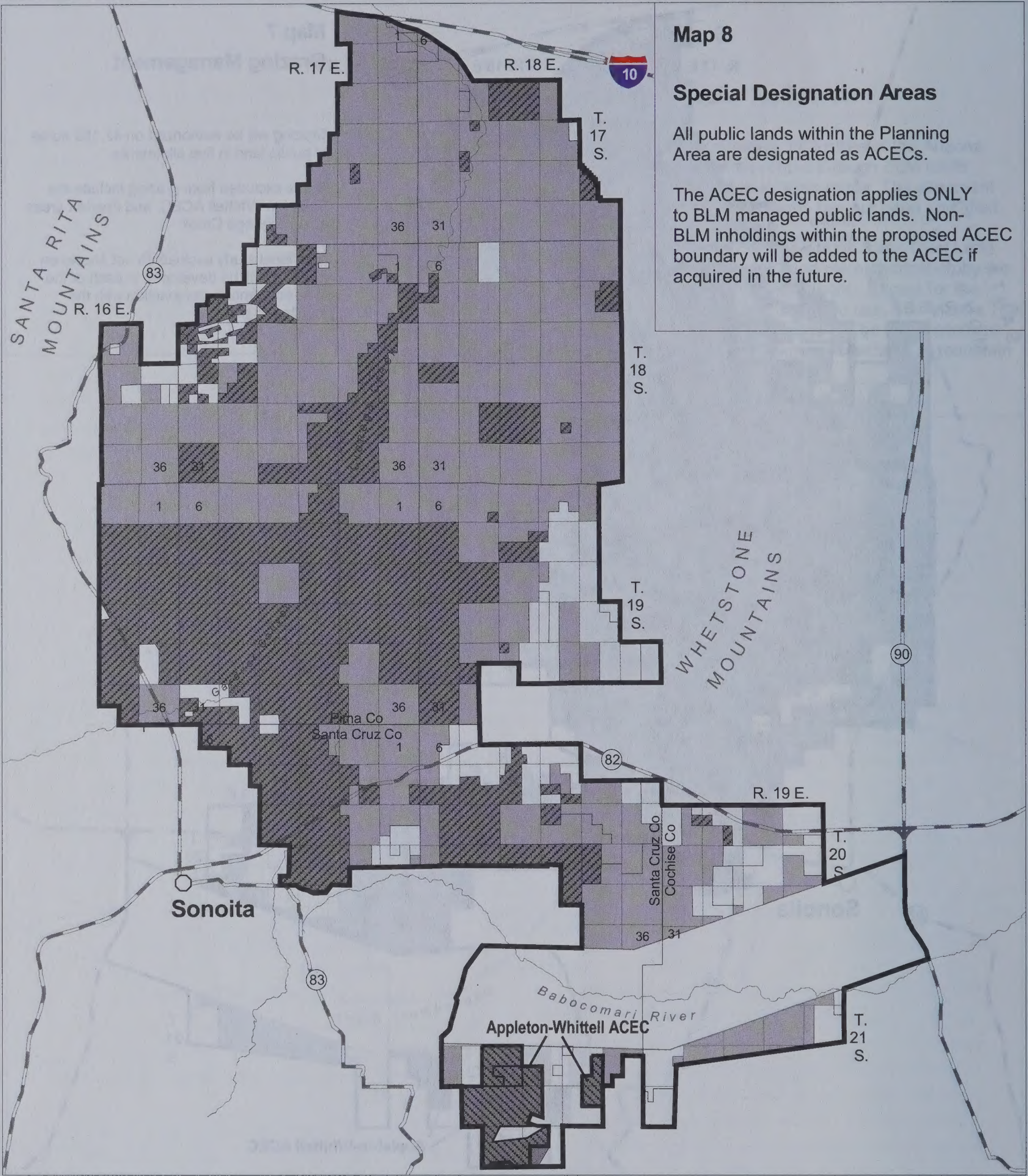
February 2003

Map 8

Special Designation Areas

All public lands within the Planning Area are designated as ACECs.

The ACEC designation applies ONLY to BLM managed public lands. Non-BLM inholdings within the proposed ACEC boundary will be added to the ACEC if acquired in the future.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WHETSTONE MOUNTAINS
Pima Co
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LAS CIENEGAS RESOURCE MANAGEMENT PLAN

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LEGEND

- — Planning Area Boundary
- ■ BLM Land
- ■ State Land
- □ Private Land
- ▨ Proposed ACEC
- ▨ Existing ACEC

February 2003

Table 4. Livestock Grazing Allocations, Las Cienegas Resource Management Plan

Allotment	Forage Allocated[1] (AUMS)	Total Acres	Total Acres Grazed	BLM Acres[2] Grazed	BLM Acres[3] Not Grazed	ASLD Acres	Private Acres
Empire-Cienega (6090)	8,448	74,146	71,827	34,365	2,319	37,462	0
Empirita (6210)	288	24,988	24,468	1,000	520	23,468	0
Rose Tree (6043)	1,104	8,869	8,469	3,550	400	3,719	1,200
Vera Earl (6129)	324	1,440	1,240	1,240	200	0	N/A
Empire Mountains	360	3,524	3,044	2,000	480	0	1,044
TOTAL:	**10,524**	**112,967**	**109,048**	**42,155**	**3,919**	**64,649**	**2,244**

[1] The forage allocated by or under the guidance of an applicable land use plan for livestock grazing in an allotment under a permit or lease is referred to as the Permitted Use and is expressed in animal unit months (AUMs). Additional forage available for livestock grazing use may be apportioned on a non-renewal basis.

[2] The number of acres available for grazing will vary with the number of acres in exclosures for both management and study purposes.

[3] The exact number of excluded acres may vary depending on the number, size, and location of study exclosures, which will be developed to help evaluate the effectiveness of grazing management. An additional 3,141 public land acres in the Appleton-Whittell ACEC are excluded from livestock grazing and are not within an allotment, bringing to 7,060 the total public land acres excluded from livestock grazing.

The 3,141 acres of public lands, now within the Appleton-Whittell ACEC (Research Ranch) will remain as a separate ACEC and is renamed the Appleton-Whittell Research ACEC (SM02). See Appendix 6 for management prescriptions for the ACEC.

Any State Trust and private lands acquired in the future within the planning area boundaries north of the Babocomari Land Grant would be incorporated into the Empire-Cienega ACEC and managed according to the prescriptions of this plan. (SM03)

Future acquisitions of State Trust and private lands within the planning area boundaries south of the Babocomari Land Grant will be incorporated into the Appleton-Whittell Research ACEC and managed for research values. (SM04)

The Management Actions in this Approved Plan will be the management plan for the Empire-Cienega ACEC. (SM05)

Wild and Scenic Rivers

BLM will continue to manage the Cienega Creek Wild and Scenic Rivers Study Area to protect resources pending congressional action on designation. (SM06)

Land Tenure Adjustments

Public lands in Las Cienegas NCA will be retained and additional lands or easements may be acquired within the SVAPD according to the prescriptions in the Las Cienegas Acquisition Strategy (See Appendix 7). The Acquisition Strategy includes criteria for prioritizing acquisitions and identifies both traditional and non-traditional means of acquisition from the NCA Act and other legislation. (LR06)

Public lands that become contiguous with the NCA due to acquisitions of intermixed lands will become part of the NCA. (LR07)

Acquisitions within the SVAPD will become part of the NCA upon acquisition. (LR08)

Any acquisitions of lands or easements inside the planning area but outside the designated SVAPD (see Map 1-2 on page 1-3 of the PRMP/FEIS) will be completed according to objectives and management prescriptions summarized in the Management Guidance section of Appendix 2 (page A2-9) in the PRMP/FEIS. (LR09)

Any lands acquired in the future will be managed in accordance with this RMP including prescriptions for ACECs, recreation zones, and other designated areas as applicable. (LR10)

The Elgin landfill, which is within the NCA boundary, is currently under a Recreation & Public Purposes lease. Since disposal of lands is prohibited within Las Cienegas NCA boundary, BLM and/or Santa Cruz County may seek to have the landfill legislatively exempted from the NCA if Santa Cruz County wishes to acquire it. Alternatively, BLM would work with Santa Cruz County on closing and rehabilitating the landfill in accordance with BLM policy, and Environmental Protection Agency and Arizona Department of Environmental Quality standards. In this case, the lease would remain in effect and the County would be held accountable until closure requirements have been met and rehabilitation determined to be successful. (LR11)

Management Actions

General Management Actions

Administrative Sites

BLM designates the Empire Ranch Headquarters (about 80 acres), Hummel Ranch buildings (about 10 acres), Cienega Ranch buildings (about 5 acres), and High Lonesome buildings (about 10 acres) as administrative sites (Map 9). These buildings may be used for a variety of purposes including housing, office space, visitor contact, and ranch management. Within the administrative site boundaries, the areas will be closed to discharge of firearms, camping, and other public uses not provided for in conjunction with the administrative use. (AM01)

Cooperative Agreements

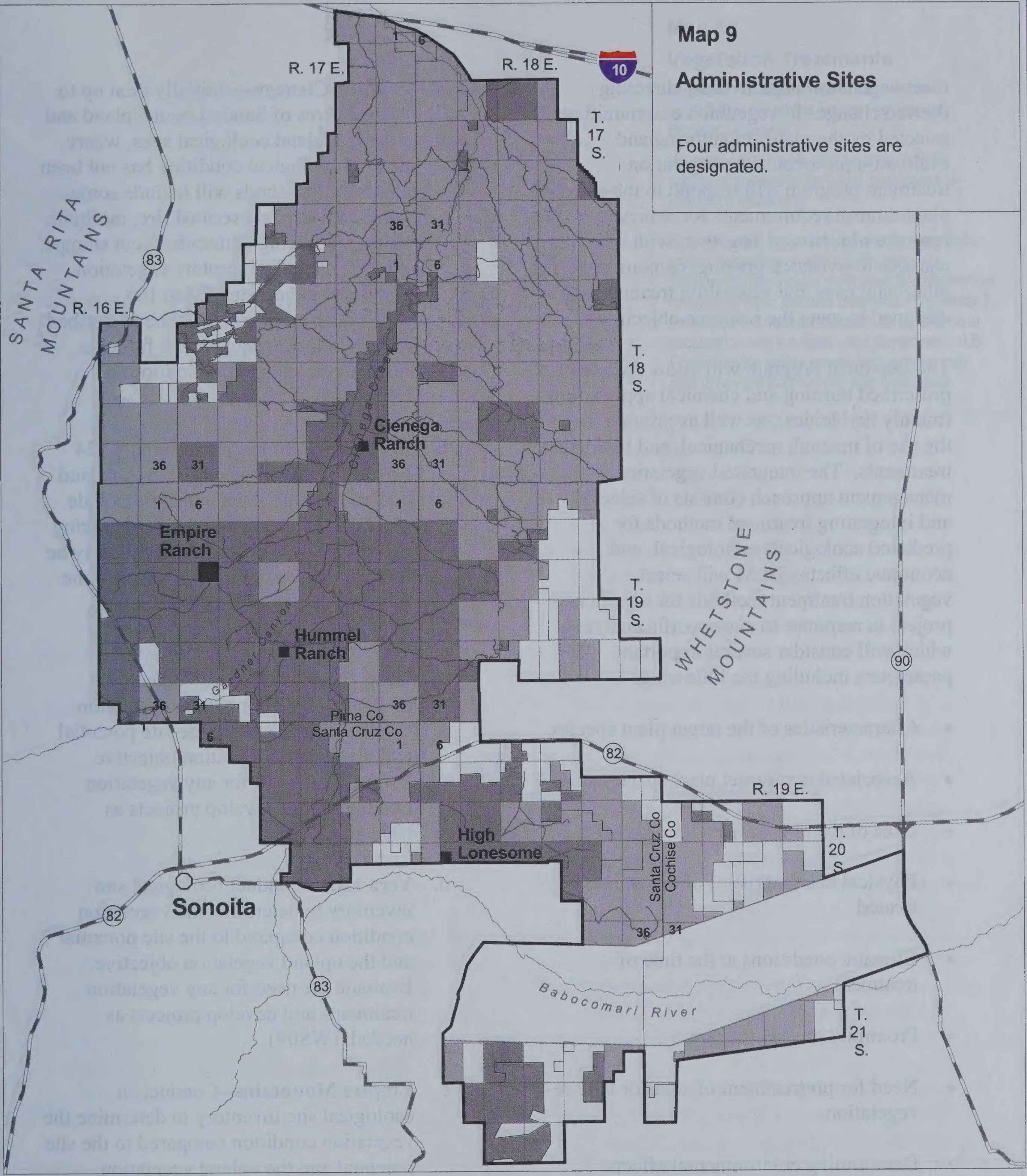
BLM will consider establishing Cooperative Management Agreements in the future with other federal, state or local government entities for public benefit that would result in benefits to NCA resources and further the purposes of NCA legislation. (AM02)

Watershed: Upland, Riparian, and Aquatic Area Management Actions

The following management actions support the upland vegetation, riparian vegetation, and aquatic objectives:

1. Implement an integrated vegetation treatment program. (WS05)

   The resource goals and objectives in this plan require maintaining desired plant communities, where they are occurring, and attaining desired vegetation states where existing conditions are not satisfactory. BLM will apply integrated vegetation treatment to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SANTA RITA MOUNTAINS
WHETSTONE MOUNTAINS
Cienega Creek
Cienega Ranch
Empire Ranch
Hummel Ranch
High Lonesome
Gardner Canyon
Pima Co
Santa Cruz Co
Cochise Co
Sonoita
Babocomari River
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Map 9

Administrative Sites

Four administrative sites are designated.

LAS CIENEGAS RESOURCE MANAGEMENT PLAN

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LEGEND
— Planning Area Boundary
▨ BLM Land
▨ State Land
☐ Private Land
■ Administrative Site

February 2003

meet vegetation objectives by directing desired changes in vegetation communities selected by the plan's monitoring and evaluation protocol. The vegetation treatment program will respond to the many plant-control requirements for achieving resource objectives. Together with the changes to livestock grazing, recreation, and other land uses, the vegetation treatments are designed to meet the resource objectives.

The treatment program will allow the use of prescribed burning and chemical applications (mainly herbicides), as well as provide for the use of manual, mechanical, and biological treatments. The integrated vegetation management approach consists of selecting and integrating treatment methods for predicted ecological, sociological, and economic effects. BLM will select vegetation treatment methods for a particular project in response to site-specific analyses, which will consider several important parameters including the following:

- Characteristics of the target plant species
- Associated non-target plant species
- Uses of the target area
- Physical characteristics of the area to be treated
- Climatic conditions at the time of treatment
- Proximity to sensitive areas
- Need for pretreatment of areas or later re-vegetation
- Determining environmental effects
- Feasible alternatives

(Appendix 8 describes the vegetation treatment methods in more detail.)

The following are the general vegetation treatment prescriptions for each allotment:

a. **Empire-Cienega**— Initially treat up to 11,582 acres of Sandy Loam Upland and Loamy Upland ecological sites, where desired ecological condition has not been achieved. Methods will include some combination of prescribed fire, mesquite cutting, applying herbicide to cut stumps, burning slash and shrubby vegetation, and deferring grazing (Map 10). Vegetation treatments may be prescribed for additional acreage in the future in response to vegetation monitoring. (WS06)

b. **Empirita** -- Initially treat up to 8,324 acres of Limy Slopes and Limy Upland ecological sites. Methods will include prescribed burning and deferred grazing (Map 10). Vegetation treatments may be prescribed for additional acreage in the future in response to vegetation monitoring. (WS07)

c. **Rose Tree**--Conduct ecological site inventory to determine the vegetation condition compared to the site potential and the upland vegetation objective. Evaluate the need for any vegetation treatments and develop projects as needed. (WS08).

d. **Vera Earl**--Conduct ecological site inventory to determine the vegetation condition compared to the site potential and the upland vegetation objective. Evaluate the need for any vegetation treatments and develop projects as needed. (WS09)

e. **Empire Mountains--**Conduct an ecological site inventory to determine the vegetation condition compared to the site potential and the upland vegetation objective. Evaluate the need for any vegetation treatments and develop projects as needed. (WS10)

In non-wildland urban interface areas, BLM will implement the integrated vegetation treatment strategy in coordination with surrounding landowners including the

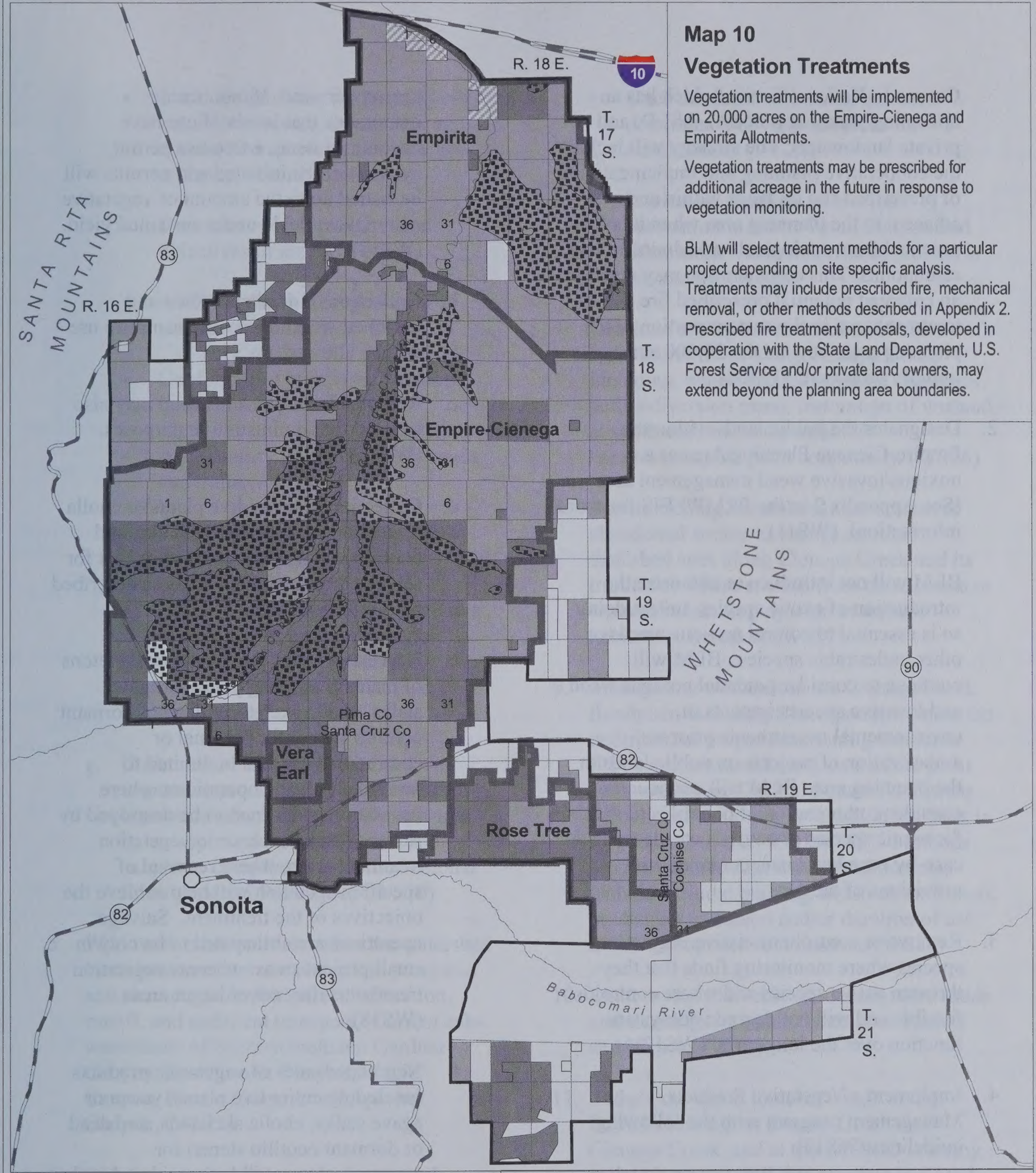
Map 10

Vegetation Treatments

Vegetation treatments will be implemented on 20,000 acres on the Empire-Cienega and Empirita Allotments.

Vegetation treatments may be prescribed for additional acreage in the future in response to vegetation monitoring.

BLM will select treatment methods for a particular project depending on site specific analysis. Treatments may include prescribed fire, mechanical removal, or other methods described in Appendix 2. Prescribed fire treatment proposals, developed in cooperation with the State Land Department, U.S. Forest Service and/or private land owners, may extend beyond the planning area boundaries.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WHETSTONE MOUNTAINS
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Pima Co
Santa Cruz Co
Vera Earl
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LEGEND

- ― Planning Area Boundary
- ▭ Grazing Allotment Boundary
- ☐ Private Land
- ▨ State Land
- ■ BLM Land
- ▦ Vegetation Treatment Area

LAS CIENEGAS
RESOURCE MANAGEMENT PLAN

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February 2003

Coronado National Forest (which has an upcoming planning process), ASLD, and private landowners. The strategy will include the cooperative planning and implementation of prescribed fire on lands within and adjacent to the planning area when it is practical from ecological and administrative standpoints. This collaboration may result in an enlarged potential prescribed fire treatment area in the eastern portion of the planning area, beyond the 20,000 acres initially proposed. (FM02)

2. Designates the public lands within the Empire-Cienega Planning Area as a noxious/invasive weed management area (See Appendix 2 in the PRMP/FEIS for more information). (WS11)

   BLM will not introduce or authorize the introduction of exotic species, unless doing so is essential to control noxious weeds or other undesirable species. BLM will continue to consider potential noxious weed and invasive species impacts in environmental assessments prior to authorization of projects on public lands in the planning area. BLM will continue to consider authorization of control activities for exotic species or noxious weeds on a case-by-case basis in accordance with provisions of the Act.

3. Remove or control non-native vegetation species where monitoring finds that they threaten native species and where control is feasible and will not degrade ecosystem function over the long-term. (WS12)

4. Implement a Vegetative Products Management program with the following guidelines (WS13):

   a. Collection of flowers, leaves, and fruit (including nuts, berries, and seeds) from plants on BLM managed public lands will be allowed for personal use in accordance with state native plant laws. The quantity of material collected will be limited to a maximum of 20 pounds (depending on the type of material) per person per year. If monitoring determines that levels of use have become an issue, a free-use permit system will be initiated and permits will be issued up to the amount of vegetative material available under sustained yield. (WS14)

   b. Collection of dead and down and detached wood for on-site campfire use will be allowed. (WS15)

   c. Reasonable amounts of wood may also be used for administrative purposes. (WS16)

   d. Collection of entire live plants or cholla skeletons, yucca or agave stalks, and ocotillo will not be permitted except for salvage or in treatment areas as described below. (WS17)

   e. Harvest of entire live plants or skeletons of plants (including yucca or agave stalks, cholla skeletons, dead or dormant ocotillo stems) for personal or commercial use will be limited to permitted salvage operations, where vegetation is destined to be destroyed by surface disturbance, or to vegetation treatment areas, where removal of specific vegetation will help achieve the objectives of the treatment. Salvage operations are anticipated to be only in small project areas, whereas vegetation treatments may cover larger areas. (WS18)

   f. Negotiated sales of vegetative products (excluding entire live plants, yucca or agave stalks, cholla skeletons, and dead or dormant ocotillo stems) for commercial use will be considered in the future. Proposed sales will be subject to compliance with the National Environmental Policy Act and only if it complies with the NCA legislation and the objectives of this plan. Criteria used to determine suitability of any proposed sales will include the following (WS19):

- Lack of significant impacts to soils, cultural resources, threatened and endangered species, riparian areas and other sensitive resources.
- Consistency with management objectives of the NCA plan.
- Ability to harvest product on a sustained yield basis.
- Conformance with visual resource management policy.
- Accessibility from designated roads and trails.
- Whether harvest would promote invasive species.
- Level of public demand and relative availability of product in region.
- Ability to mitigate any surface disturbance.

g. Collection of live vegetation or vegetative products will be allowed for legitimate scientific uses when covered by an approved research permit and subject to compliance with the National Environmental Policy Act. (WS20)

5. Work with other entities within the watershed to maintain or improve watershed processes and characteristics that affect infiltration, runoff, and sediment transport. Current sub-watersheds of concern include: Gardner Canyon, Springwater Canyon, Mattie Canyon, Fresno Canyon, and Apache Canyon. (WS21)

6. Stabilize erosion and restore the natural function of the drainage in Wood Canyon (WS22) according to the following management prescriptions:

    - Monitor the rate at which the gully system in lower Wood Canyon is advancing and the mechanism involved in this erosion process. (WS23)
    - Once the cause of erosion has been determined, develop methods for stabilization. (WS24)
    - Implement methods of erosion prevention in lower Wood Canyon and other areas where this type of erosion is advancing. (WS25)

7. Continue ecological restoration of old agricultural fields along Cienega Creek including, where feasible, routing drainages across diversion canal, restoration of wetland at south end, and restoration of sacaton/mesquite plant community. (WS26)

8. Repair eroding streambanks or terraces at abandoned stream crossings or other disturbed sites along Cienega Creek and its tributaries where erosion from these banks or terraces is harming riparian or aquatic habitats or function. (WS27)

9. Manage any wetlands in the Cienega Creek floodplain including Cinco ponds to meet the definition of proper functioning condition (PFC) and advanced seral state of the plant community (see Desired Future Conditions section and lentic PFC evaluation methods in Appendix 2 of the PRMP/FEIS). Methods used to achieve functional condition may include periodic burning, livestock exclusion, or changes in season and/or duration of use in the appropriate combination. (WS28)

10. Limit motorized vehicles to designated roads and crossings on public lands (See Table 5 and Map 4). (WS29)

11. Reduce the speed limit to10 mph at the EC901 crossings at Empire Gulch and Cienega Creek, and at the EC910D crossing at the Narrows (until this crossing is closed and rehabilitated) and post the speed limit at each crossing to reduce the impacts of vehicles on Chiricahua leopard frog, desert pupfish, Gila chub, Gila topminnow, and Southwestern willow flycatcher. (TC02)

Table 5. Designated Road Crossings on Cienega Creek and Empire Gulch
Las Cienegas Resource Management Plan

Road Number	Route Designation	Notes
EC-901 at Empire Gulch	Open to all motorized travel.	Perennial water through culvert under concrete crossing. Flows over structure only during peak flood flows.
910D (Narrows)	Closed to all travel. Obliterate and revegetate (as necessary).	Several crossings across perennial portion of Cienega Creek, but very marshy in stream. Under current management, proposed to be closed to motorized vehicles as part of restoration project.
910B (Fresno Gap)	Closed to all motorized travel. Open (across creek) for non -motorized travel*.	Under current management, road crossing through Cienega Creek at Sanford Canyon has been closed to motorized vehicles for restoration and spur to Falls has been closed to motorized vehicles due to hazards
EC-901 at Cienega Creek	Open to all motorized travel.	Concrete crossing. Water flows at crossing about ½ year
EC-901B at Cienega Creek (Ag. Fields)	Closed to all motorized travel. Open for non -motorized travel (upstream).	Under current management, road crossing has been closed due to restoration project. An alternative non-motorized crossing will be developed upstream
EC-901A at Cienega Creek (Oak Tree Canyon-Bahti's Bog)	Closed to all travel. Obliterate and revegetate (if necessary).	Perennial water in creek. Route across creek has already overgrown and revegetated.
EC-903 at Cienega Creek (Springwater Canyon)	Closed to all travel. Obliterate and revegetate (if necessary).	Perennial water in Creek. Route through sacaton and across creek is overgrown with vegetation.
EC-904 at Cienega Creek (Gardner Canyon)	Closed to all travel. Obliterate and revegetate (if necessary).	Perennial water in Creek. Route across creek is overgrown with vegetation.
EC-914A at Cienega Creek (Headwaters)	Closed to all travel. Obliterate and revegetate (if necessary).	Dry sand crossing with flows only during storm events. Road approaches severely eroded
EC-914 at Cienega Creek (Above Headwaters)	Open to all Motorized travel.	Dry sand crossing with flows only during storm events.
EC-913 at Cienega Creek (Oil Well)	Open to all motorized travel.	Dry sand crossing with flows only during storm events.
EC-900 at Cienega Creek (South Road)	Open to all motorized travel.	Dry sand crossing with flows only during storm events.

* Non-motorized travel is hiking, equestrian, and mountain bike use.

12. Limit crossings of Cienega Creek for permitted group activities to dry crossings or designated road or trail crossings. Designated road and trail crossings are shown on the designated road system (See Map 4). (WS30)
13. Prohibit recreational gold panning, dredging, or sluicing within Cienega Creek or its tributaries on public lands within the planning area. (WS31)
14. In riparian areas, prohibit camping within 100 feet of each side of the stream channel (whether flowing or dry). (WS32)
15. Minimize the building of developments in the 100-year floodplain. Limit developments to those needed to reduce impacts on riparian and aquatic areas. (WS33)
16. Ensure that activities in riparian areas do not cause streambank stability to drop below 90%. Methods to protect streambanks include education and restrictions on activities. Streambank stability is measured as a percentage of alteration to streambanks including broken-down, eroded, or denuded streambanks from any mix of activities. (WS34)
17. Implement design changes on roads where change is found to be needed to halt excessive erosion or reduce other resource impacts. (WS35)

Fish and Wildlife Management Actions

The following management actions support the fish and wildlife objective:

1. Use the Section 7 consultation process with the USFWS to ensure that actions undertaken do not jeopardize the existence of endangered or threatened species or species proposed for listing. (AA01)
2. Cooperate with state and federal agencies, universities, conservation groups, and other organizations on proposals including fish and wildlife research, fish and wildlife habitat improvement projects, inventory and monitoring of species and habitats, and mitigation of impacts from other activities. (AA02)
3. To minimize impacts from recreation and as part of the proposed public education program, information will be included on the presence of listed species in the area, their status and importance, and prohibitions. The educational venue can take any form, but the first one with this message must be completed within one year of the date of the Biological Opinion. (TC03)
4. All BLM personnel working in aquatic habitats will use the protocol described in FWS/AGFD/NMGF (2002) to reduce the spread of chytrid fungus to Chiricahua leopard frogs. (TC04)
5. All personnel performing maintenance at any creek crossing will be informed of the potential presence of Chiricahua leopard frogs, desert pupfish, Gila Chub, Gila topminnow, and/or Southwestern willow flycatcher, the status of each species, and the need to perform their duties to avoid impacts to the species and their habitats. (TC05)
6. Implement the following measures to protect lesser long-nosed bat roosts and/or foraging habitat:

a. Ensure that road or trail building and maintenance activities do not increase or facilitate public access to known day roosts of lesser long-nosed bats. (WF06)

b. For roads designated to be closed within lesser long-nosed bat core use-areas, close them before December 31, 2010. (TC06)

c. Avoid or minimize injury and mortality to paniculate agaves during any construction activity as determined by pre-construction surveys. (WF07)

d. Design vegetation treatments, including prescribed fire, to minimize harm to paniculate agaves and to ensure that no more than 20% of agaves that are burned during prescribed fire are killed by the fire. (TC07)

e. Develop mitigation in coordination with the USFWS for any vegetation treatment, including prescribed fire, within 0.5 mile of a bat roost or in areas that support paniculate agaves. (AA03)

f. Do not impact more than 1% of the agaves present within 0.5 miles of any new road, trail, fence, recreational, or other infrastructure such as parking pullouts, repressos, and educational facilities within lesser long-nosed bat core use-areas. If more than 1% is impacted, plant and ensure the survival of enough agaves so that the total number of agaves lost is less than 1%. (TC08)

7. Implement the following measures to protect jaguar and jaguar habitat:

   a. Maintain dense, low vegetation in the Cienega Creek riparian corridor for jaguar. (WF08)

   b. Do not subject jaguar to any predator control activities. (WF09)

   c. Investigate all reports or observations of jaguars in coordination with the USFWS and the AGFD. (AA04)

8. Implement the following measures to protect Southwestern willow flycatcher and flycatcher habitat:

   a. Manage suitable willow flycatcher habitat so that its suitable characteristics are not eliminated or degraded. (WF10)

   b. Manage potential willow flycatcher habitat to allow natural regeneration into suitable habitat, as rapidly as possible. (WF11)

   c. Control cowbirds within five miles of occupied habitat using suitable control methods, if cowbird concentrations indicate a strong likelihood that parasitism to flycatcher nests is occurring or if parasitism of a nest is documented. (WF12)

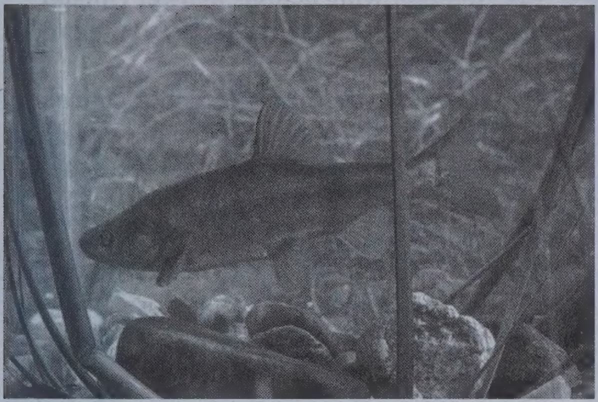
   Note: Other actions to protect Southwestern willow flycatcher and its habitat from impacts of livestock grazing can be found in the livestock grazing management actions section.

9. Implement the Gila topminnow recovery plan to increase security for the Cienega Creek Gila topminnow population by the following (WF13):

   - Protecting surface water quality and quantity.
   - Protecting the creek from contamination by non-native fish and frogs and their parasites.
   - Achieving and maintaining habitat integrity and function.

   Accomplish this action through the following:

   a. Secure enough instream flow rights for Cienega Creek to maintain the existing



aquatic and riparian habitat in the creek for fish and wildlife (i.e., supports riparian and aquatic habitats and the Gila topminnow, longfin dace, Gila chub, native leopard frog, Sonoran mud turtle, Mexican garter snake, and other species dependent on flowing surface water). (WF14)

b. In partnership with the AGFD, control or remove exotic fishes and amphibians from stock tanks or streams in portions of the basin that drain into perennial parts of Cienega Creek. Coordinate with AGFD on the need to renovate (i.e., chemically treat) waters that contain exotic fishes and amphibians that threaten any native fishes or frogs. (WF15)

c. Develop information and erect signs on the need to protect Cienega Creek from exotic fish and other non-native aquatic organisms. (AA05)

d. Minimize road access and crossings in the creek to decrease the opportunity for live releases of game fish and bait. Actions to minimize road access and crossings are shown on the designated road system on Map 4. (WF16)

e. Working with the Pima County and Santa Cruz County Health Departments to ensure that mosquitofish are not used as a biological control for mosquitos in the basin. (AA06)

f. Evaluate and stock three or more reintroductions within the basin with Gila topminnow in cooperation with the AGFD and the USFWS. Sites currently selected for reintroduction include Nogales and Little Nogales Springs, Upper Empire Gulch, and Cinco Ponds. Additional sites may be proposed in the future if determined to be suitable. (WF17)

Note: Other actions to protect Gila topminnow and topminnow habitat from impacts of livestock grazing can be found in the livestock grazing management actions section.

10. Reestablish, extend the distribution within historic ranges of, or supplement populations of the following wildlife species in the Sonoita Valley, where determined to have suitable habitat and be compatible with other management activities: (WF18)

Aplomado falcon (*Falco femoralis*)
Gould's turkey (*Meleagris gallopavo mexicana*)
Gila topminnow (*Poeciliopsis occidentalis*)
Desert pupfish (*Cyprinodon macularius*)
Beaver (*Castor canadensis*)
Gila chub (*Gila intermedia*)
Pronghorn antelope (*Antilopcapra americana*)
Lowland leopard frog (*Rana yavapaiensis*)
Chiricahua leopard frog (*Rana chiricahuensis*)
Black-tailed prairie dog (*Cynomys ludovicianus*)

(Other species may be considered as new information or management needs become known.)

Accomplish this action through the following steps:

a. Determine the population status and resources available (e.g., habitat quality, water availability) to wildlife species proposed for reestablishing or supplementing. (AA07)

   b. When habitat conditions have been determined to be suitable for the survival of any of the above species, coordinate the suitable action (reestablishing or supplementing) by established procedures with the suitable combination of agencies and land owners: AGFD, USFWS, BLM, ASLD, and affected private landowners. (AA08)

11. Remove or control non-native species in coordination with AGFD where monitoring finds that they threaten native species. (WF19)

    a. During control operations, BLM will ensure that operators can identify bullfrogs and leopard frogs. (TC09)

    b. If traps or other methods that do not discriminate between frog species are used during bullfrog control, they will be checked at least twice a day, for as long as the traps or other gear is deployed. (TC10)

    c. Before nonindigenous aquatic species control activities occur, BLM will ensure that monitoring for the presence of desert pupfish, Gila chub and Gila topminnow occurs. BLM will ensure that desert pupfish, Gila chub and/or Gila topminnow are removed and repatriated as appropriate. (TC11)

12. Manage for a mosaic of priority habitats (e.g., riparian/wetland, grassland, oak woodland, mesquite bosques) by applying vegetation treatments (including prescribed fire) as outlined in the integrated vegetation treatment program, reintroducing species where determined feasible through steps outlined in number 7 above (WF18), and periodically resting areas from grazing. (WF20)

13. Take the following actions to meet Upland Vegetation Sub-Objective B for pronghorn:

    a. Use prescribed fire and/or mechanical or chemical vegetation treatments as well as periodic rest from grazing to meet the habitat objective for pronghorn. (WF21)

    b. Provide usable water sources within one mile of each other in pronghorn fawning areas and do not exceed four miles between usable water sources in pronghorn habitat. Evaluate and monitor suitability of waters and distance to permanent and functioning waters. (WF22)

    c. Modify or remove fences that restrict pronghorn movement. Fences to be modified are shown on Map 11. Additional fences may be proposed for modification or removal in the future in response to monitoring data. (WF23)

    d. Maintain fences that protect pronghorn from hazards (e.g., highway fences) and erect other restrictive fencing where needed. (WF24)

    e. Support investigations of pronghorn use of highway underpasses and explore other partnership opportunities to help pronghorn cross highways. (Note: Include possibility of overpasses if highway is ever re-engineered. Using areas with cuts on each side would essentially form short tunnels for vehicles.) (AA09)

    f. Recommend to the community through Sonoita Crossroads or another avenue that developments be encouraged to cluster homes to provide open movement areas that could double as community viewing locations for pronghorn. (AA10)

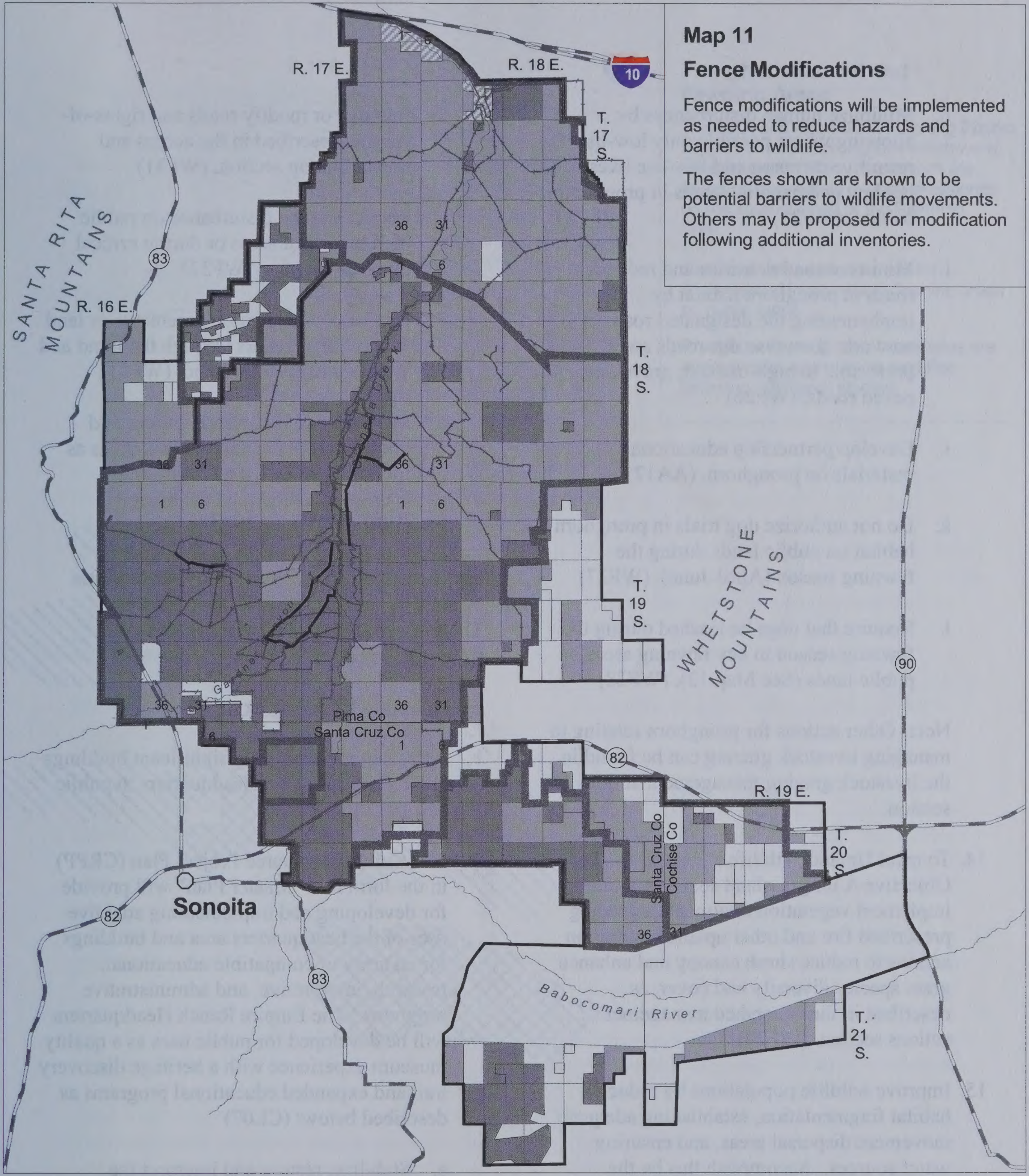
    g. Recommend to the community through Sonoita Crossroads or other avenue that pronghorn-friendly fencing be installed in developments to ease pronghorn movement in the community. (AA11)

Map 11

Fence Modifications

Fence modifications will be implemented as needed to reduce hazards and barriers to wildlife.

The fences shown are known to be potential barriers to wildlife movements. Others may be proposed for modification following additional inventories.



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LAS CIENEGAS RESOURCE MANAGEMENT PLAN

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LEGEND

—	Planning Area Boundary
■	BLM Land
▨	State Land
□	Private Land
▭	Grazing Allotment Boundary
—	Pipeline, Existing
—+—	Fence, Existing
—+—	Proposed Fence Modification

February 2003

h. Minimize human disturbances by allowing where possible only low-use primitive camping and low-use livestock holding and handling areas in pronghorn habitat. (WF25)

i. Minimize road densities and redundant roads in pronghorn habitat by implementing the designated road network. Low-use dirt roads are preferable to high-use dirt, gravel, or paved roads. (WF26)

j. Develop partnership educational materials on pronghorn. (AA12)

k. Do not authorize dog trials in pronghorn habitat on public lands during the fawning season (April-June). (WF27)

l. Require that dogs be leashed during the fawning season in key fawning areas on public lands (See Map 12). (WF28)

Note: Other actions for pronghorn relating to managing livestock grazing can be found in the livestock grazing management actions section.

14. To meet Upland Wildlife Habitat Sub-Objective A for grassland sparrow habitat, implement vegetation treatments including prescribed fire and other upland restoration actions to reduce shrub canopy and enhance grass species diversity and cover, as described in the watershed management actions section. (WF29)

15. Improve wildlife populations by reducing habitat fragmentation, establishing adequate movement/dispersal areas, and ensuring water sources. Accomplish this by the following:

    a. Modify or remove fences where feasible. Fences to be modified are shown on Map 11. Additional fences may be proposed for modification or removal in response to monitoring data. (WF30)

    b. Remove or modify roads and rights-of-way, as described in the access and transportation section. (WF31)

    c. Reduce human disturbance on public land in critical areas or during critical times of the year. (WF32)

    d. Purchase conservation easements or land from willing sellers through the Land and Water Conservation Fund. (WF33)

    e. Maintain existing water sources and provide supplemental water sources as found to be needed through water sources inventory and evaluation. (WF34)

Cultural Resource Management Actions

The following actions support the cultural resources objective:

Empire Ranch Headquarters

1. Allocate the historically significant buildings at the Empire Ranch Headquarters to public use. (CL06)

2. The Cultural Resource Project Plan (CRPP) in the form of a "Master Plan" will provide for developing and implementing adaptive uses of the headquarters area and buildings for an array of compatible educational, research, interpretive, and administrative programs. The Empire Ranch Headquarters will be developed for public uses as a quality museum experience with a heritage discovery trail and expanded educational programs as described below: (CL07)

    a. Stabilize, restore and interpret the Empire Ranch House as a historic house or museum according to an adaptive reuse plan. Interpretive themes will include the ranch, local and regional history, events, and people. (CL08)

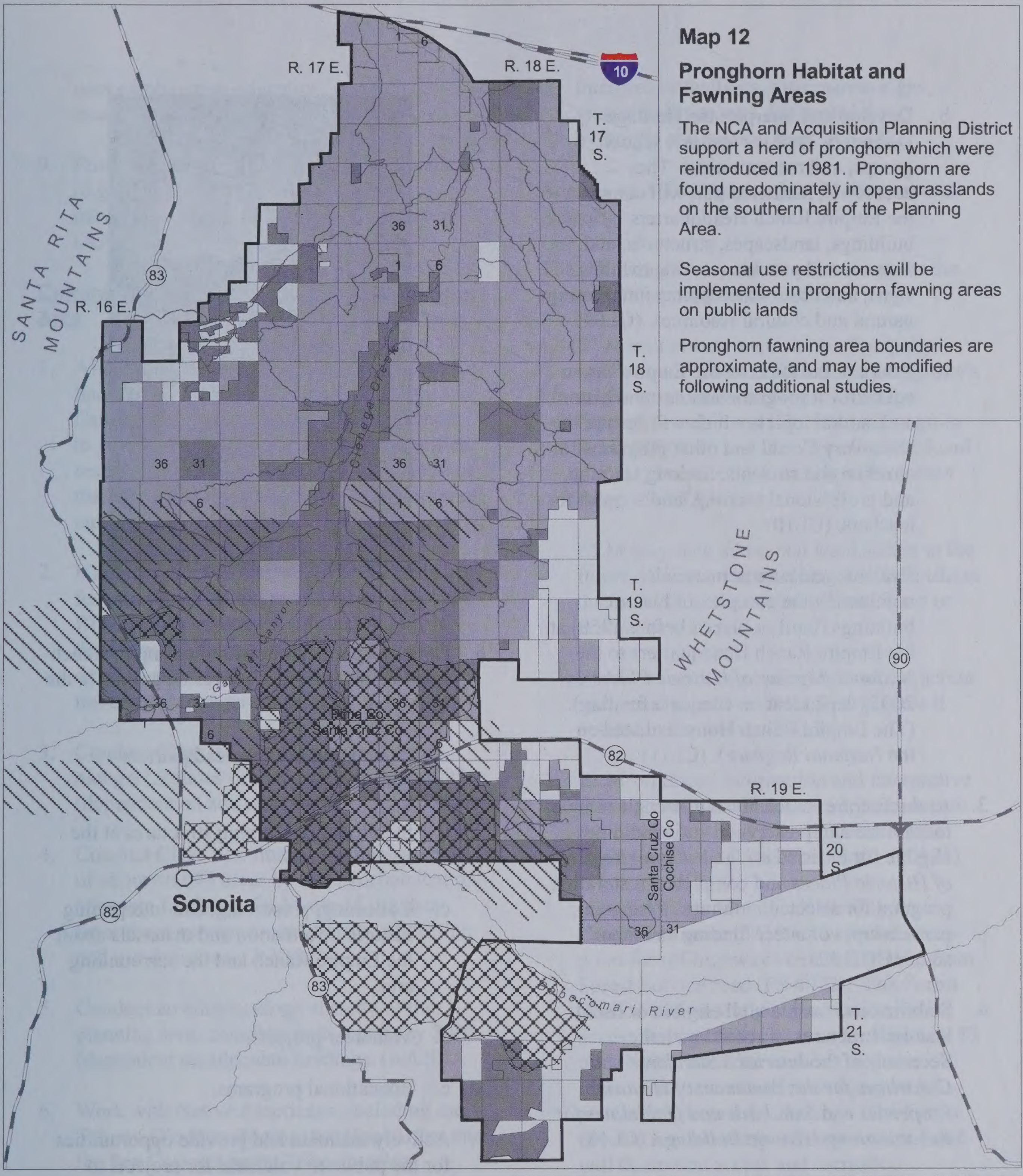
Map 12

Pronghorn Habitat and Fawning Areas

The NCA and Acquisition Planning District support a herd of pronghorn which were reintroduced in 1981. Pronghorn are found predominately in open grasslands on the southern half of the Planning Area.

Seasonal use restrictions will be implemented in pronghorn fawning areas on public lands

Pronghorn fawning area boundaries are approximate, and may be modified following additional studies.



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LEGEND

- — Planning Area Boundary
- ▆ BLM Land
- ▨ State Land
- ☐ Private Land
- ▧ Pronghorn Habitat
- ▩ Pronghorn Fawning Area
- ╱╲ Road Network

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February 2003

b. Develop and interpret the Heritage Discovery Trail for visitors, school groups, and recreationists. The accessible, hardened trail will connect the Empire Ranch Headquarters buildings, landscapes, structures, and features and provide wayside exhibits, signs, and observation points interpreting natural and cultural resources. (CL09)

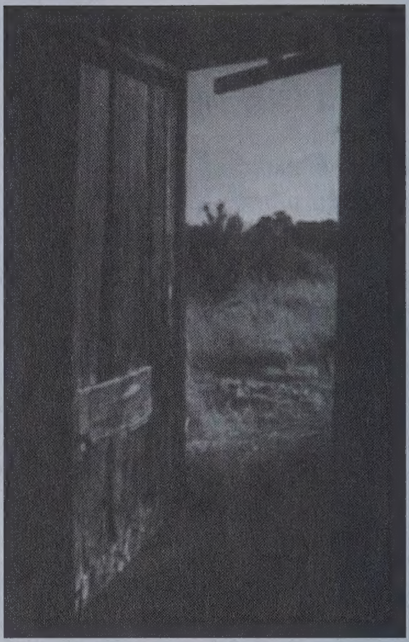
c. Adopt "Education on the Empire" as an educational program built around historic and natural topics, which will feature the Discovery Corral and other programs for children and students, lifelong learning and professional training, and support for teachers. (CL10)

d. Evaluate and submit materials nominating the complex of historic buildings (built or placed before 1950) at the Empire Ranch Headquarters to the *National Register of Historic Places* by 2005 (dependent on adequate funding). (The Empire Ranch House is listed on the *National Register*). (CL11)

3. At the Empire Ranch Headquarters, continue to stabilize and preserve historic buildings eligible for or listed on the *National Register of Historic Places* and complete a restoration program for selected buildings. Use grant, partnership, volunteer funding and labor sources. (CL12)

4. Stabilize and maintain all eligible or listed historic structures in accord with the Secretary of the *Interior's Standards and Guidelines for the Treatment of Historic Properties* and *Standards and Guidelines for Rehabilitating Historic Buildings*. (CL13)

5. Manage and maintain at BLM standards for safety, accessibility, and occupancy, buildings and structures within the complex that are not eligible for listing on the *National Register of Historic Places*, including recreational facilities, storage buildings, sheds, shops, and occupied structures. (AA13)



6. Continue partnership with the Empire Ranch Foundation and other interested groups in the following: (AA14)

   a. Planning use of the headquarters complex.

   b. Stabilizing/preserving structures at the headquarters.

   c. Collecting, preserving, and interpreting historic information and materials about the Empire Ranch and the surrounding area.

   d. Volunteer projects.

   e. Educational programs.

7. Actively maintain and provide opportunities for the public to volunteer for projects to preserve, conserve, and study the planning area's cultural resources. (AA15)

8. Manage the ranch headquarters to include support of historic ranching operations, administration of BLM programs, and protection in the planning area, and public

uses emphasizing education, research, interpretation, and visitation. (AA16)

9. Produce a variety of interpretive materials (e.g., brochures, web site information, news/features) about Empire Ranch history. (AA17)

Cultural Properties Outside the Headquarters Area

1. Allocate the Mattie Canyon site complex, the Sandford Homestead site, and the Pump Canyon site to scientific use and open them to scientific and historical study by qualified researchers and scholars. (See Appendix 2 of the PRMP/FEIS more details on allocation of cultural resource sites). (CL14)

2. If determined feasible, develop selected sites for interpretation and public visitations. BLM would implement this action only if funds and staff are available to adequately develop an interpretive program that would not harm the resources. (CL15)

3. Conduct Class III cultural resource surveys along 91.9 miles of roads and trails by 2005 (dependent on adequate funding). (AA18)

4. Conduct Class III cultural resource surveys of about 40,000 acres by 2007 (dependent on adequate funding). BLM would use data from these surveys to make future allocation and use decisions. (AA19)

5. Conduct an ethnoecological study of the planning area, complete with report, by 2006 (dependent on adequate funding). (AA20)

6. Work with Native Americans, including the Tohono O'odham Nation, the Hopi Tribe, and the San Carlos Apache Tribe, to select harvesting areas and allow noncommercial collection of bear grass, cottonwood, acorns and medicinal/ceremonial herbs by 2005. (CL16)

7. Develop the headquarters as a Zone 1 recreational area, in general, but with specific plans for headquarters access, trail loops, interpretive facilities, information signs, visitor facilities, and designated day, overnight and weekly uses. (CL17)

Access and Transportation Management Actions

The following management actions support the recreational opportunities objective:

1. BLM will pursue acquisition of perpetual rights-of-ways across State Trust land parcels on the south entrance road (EC-900), Cienega Ranch Road (EC-901), Cieneguita Road (EC-904), and Oak Tree Canyon Road (EC-02) to ensure continued public access (Map 13). (TA11)

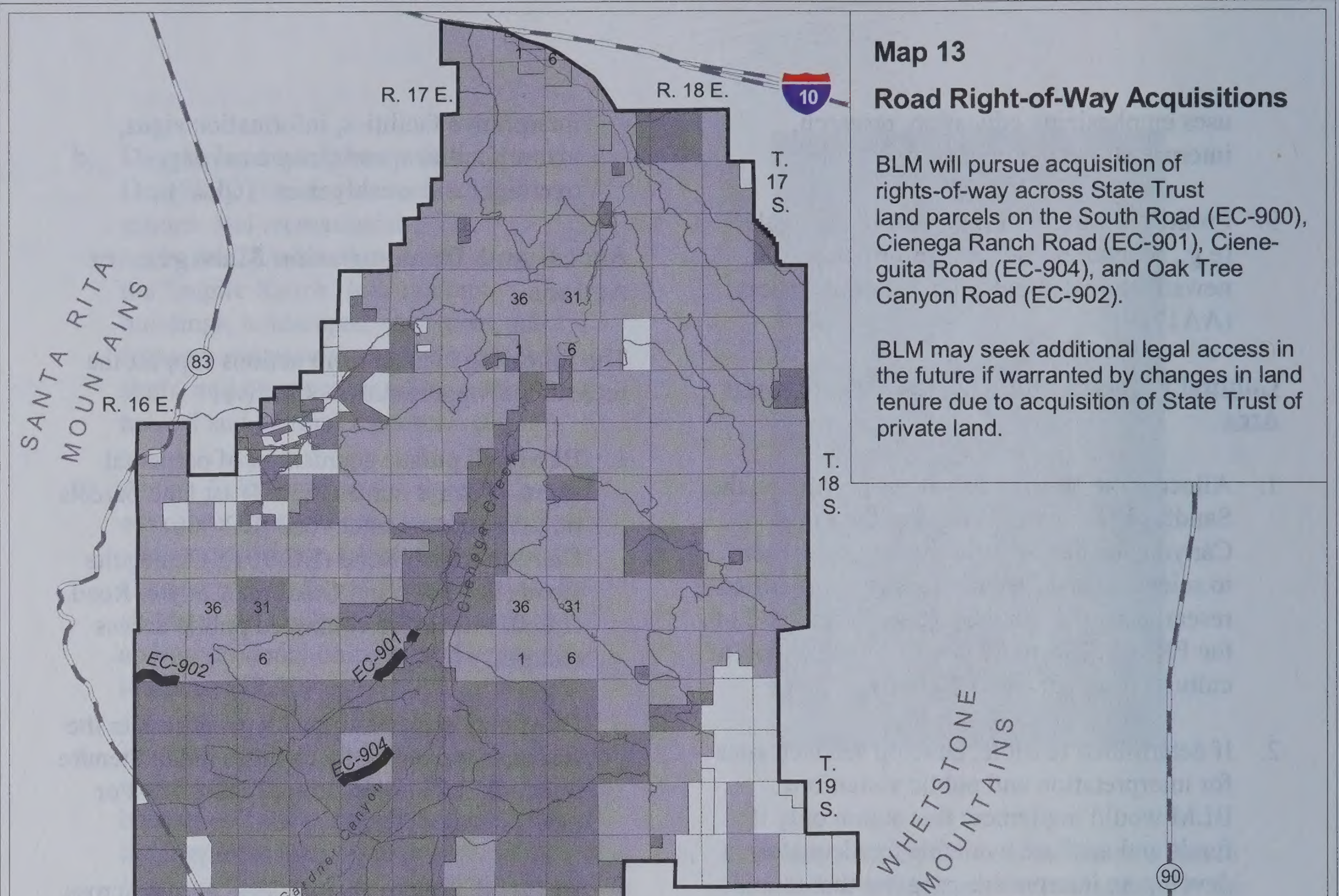
   BLM may seek additional legal access in the future, if warranted by changes in land tenure due to BLM's acquisition of State Trust or private land. (TA12)

   BLM will seek to acquire legal access across additional private or State Trust parcels if needed in the future. (TA13)

2. BLM-produced information and interpretive materials will continue to describe access to the Empire-Cienega Planning Area as the Highway 82 and 83 access points. (AA21)

3. In addition, BLM will call the Oak Tree Canyon entrance (EC 902) a limited access point for off-highway vehicles (OHVs) from Forest Service road (FS 4072). The Forest Service has currently closed motorized access through the culvert under Highway 83 on FS 4072 road due to motorized use impacts in the area and is working on a restoration project for the area. The Forest Service is conducting a Roads Analysis and will determine access and recreation designations within the next year. (AA22)

   If issues result from (1) public use of other access points, including resource damage on public lands, (2) user conflicts, or (3) conflicts with surrounding land owners, BLM will take steps to resolve these issues,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Map 13

Road Right-of-Way Acquisitions

BLM will pursue acquisition of rights-of-way across State Trust land parcels on the South Road (EC-900), Cienega Ranch Road (EC-901), Cieneguita Road (EC-904), and Oak Tree Canyon Road (EC-902).

BLM may seek additional legal access in the future if warranted by changes in land tenure due to acquisition of State Trust of private land.

LAS CIENEGAS RESOURCE MANAGEMENT PLAN

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LEGEND
— Planning Area Boundary
▨ BLM Land
▨ State Land
☐ Private Land
— Existing Road
▬ ROW Acquisition

February 2003

including education, restrictions, and, as a last resort, closures. (TA14)

4. All non-motorized trails will be open to hiking, equestrian, and mountain bike use with the exception of routes on the Appleton-Whittell Research ACEC where horseback use of roads and trails is not allowed for the protection of research values. (TA15)

5. On a case-by-case basis, BLM will evaluate future trail designation proposals, including the Great Western Trail, for conformity with planning area resource objectives and for conflicts with management prescriptions in the RMP. Generally, these trail designations will be considered only for routes on the designated transportation system. Proposals for new trail construction will be considered only if the new construction is to replace a segment of trail or road that is being or will be reclaimed. (AA23)

6. BLM will complete a transportation system project plan for the planning area by 2005. The plan will include road numbering, signing, implementing closures and restrictions, and a road maintenance schedule using the Facility Inventory Maintenance Management System (FIMMS) (See Appendix 2 of the PRMP/FEIS for more information on FIMMS). (AA24)

Recreation Management Actions

The following actions support the recreational opportunities objective:

1. Special Land Use Permit

   The mixed land ownership pattern within the planning area, and particularly the intermixed BLM and State Trust lands that are managed under differing mandates, creates recreation management challenges. To improve recreation management and provide for more seamless recreation opportunities, BLM will work with the ASLD to pursue acquisition of a special land use permit (SLUP) for State Trust lands within the planning area to provide public recreation opportunities on these lands. (AA25)

   Note: Currently, recreationists using State Trust lands for purposes other than hunting must obtain a permit and pay a fee to the ASLD. Hunters must have a valid license issued by the AGFD and be engaged in hunting.

2. Special Recreation Use Permit System

   BLM will analyze the feasibility of implementing a permit system for individual recreational use on the public lands within the planning area. The purpose of the permit system will be to provide a visitor management tool for ensuring the conservation of resources and the continued quality of recreation opportunities, both of which are impacted by increasing levels of human use of the area. The permit system will be developed using a public collaborative process with both fee and non-fee systems examined as options. If a SLUP with the ASLD is obtained, then an integrated permit system will be pursued to ensure that the public would need only one permit for the area. (RR08)

   Note: If the option of a fee program is pursued, it will be under the Land and Water Conservation Fund (LWCF) Act. The LWCF Act of 1965 gives BLM the primary authority to charge fees for use of recreational facilities and public lands, and for Golden Age and Golden Eagle Passports. Until the late 1980s, fees collected under this authority were deposited into the LWCF account, and BLM could not use them for managing recreation sites or programs. In 1988 Congress established a Recreation Operations Subactivity and began to reappropriate funds to BLM on the basis of a previous year's deposit. The funds can now be used for resource protection and for managing recreation sites and programs in the area where the fees originated.

3. **Special Recreation Permits**

   a. Many types of Special Recreation Permits may be applied for on Las Cienegas NCA for commercial, competitive and organized group events. These applications will continue to be considered on a case-by-case basis and issuance of permits is discretionary. Many applications for incompatible uses may be sought in areas that may not be suitable for the use and may conflict with the maintenance of certain desired resource conditions and established recreation settings. Indirect promotion of more primitive areas may also occur. Table 6 is designed to provide guidance and flexibility in considering the types, number, group sizes and frequencies of Special Recreation Permits in each Recreation Zone. (RR09)

   b. Organized groups will not be permitted to access areas with nesting Southwestern willow flycatchers during the breeding season. (TC12)

4. **Management of Dispersed Recreation**

A variety of dispersed recreation activities are ongoing on public lands within the planning area and most will continue to be available where consistent with Las Cienegas NCA Act, management prescriptions in this plan, and federal regulations and policy. (RR10)

Table 7 lists a variety of dispersed recreation activities that are generally suitable within each recreation zone. Other recreation activities that are generally suitable for public lands in the planning area are included in BLM's Recreation Management Information System (RMIS) (Appendix 2 of the PRMP/FEIS).

The following is a summary of the visitor use restrictions for public lands that are found in various sections of this plan for resource or visitor management and protection. Other federal and state visitor use regulations also apply:

Motorized vehicles are limited to designated routes (see TA01). Bicycles and other mechanized vehicles are also limited to designated routes. Driving "off road," which means driving a vehicle off a designated road and onto unroaded terrain, is not permitted.

a. Operators of motorized vehicles on public lands must obey current state motor vehicle regulations. (RR11)

b. In Zones 1 and 2, designated pullouts are to be used for parking (see RR04 and RR05). In Zone 3, you may park along roads but may not drive a vehicle off a road more than 25 feet to park. (RR12)

c. Speed limits on roads are 25 mph unless otherwise posted. (RR13)

d. The carrying capacity of roads or planned desired condition of roads will dictate type of use. Most back roads will be minimally maintained where high clearance vehicles to 4-wheel drive vehicles will be necessary. Therefore, low clearance vehicle use such as motor homes and sedans will be precluded. (RR14)

e. Camping is not allowed in recreation Zone 1; is restricted to designated camping areas in Zone 2; but is allowed in Zone 3 (see RR04, RR05, and RR06). However, camping is not allowed within 100 feet of streams in all recreation zones. (see WS32)

f. Recreational mining is not allowed. (see MI07 and WS31)

g. Restrictions are placed on the amounts and types of plant materials that may be collected. (see WS13)

h. Restrictions are placed on the amounts, types and methods by which rocks can be collected. (see MI08)

Table 6. Special Recreation Permit Guidance by Recreation Zone, Las Cienegas Resource Management Plan

Types of Special Recreation Permits	Zone 1 Roaded Natural	Zone 2 Natural	Zone 3 Backcountry
Commercial Guided Tours (Motorized)	Yes	Yes	Yes
Commercial Guided Tours (Non-Motorized)	Yes	Yes	Yes
Commercial Hunting Outfitters and Guides	SCO[1]	Yes	Yes
Competitive Events (Motorized)	SCO	SCO	SCO
Competitive Events (Non-Motorized)	SCO	Yes	Yes
Organized OHV Event	SCO	SCO	SCO
Organized Group Event	SCO	Yes	Yes
Interpretation, Education & Nature Study (Motorized)	Yes	Yes	Yes
Interpretation, Education & Nature Study (Non-Motorized)	Yes	Yes	Yes
Maximum Trips Per Day	3	2	2
Number of Overlapping[2] Permits Per Use Area	3	2	2
Site Fee Reservation	Optional	Optional	Optional
Group Size (Requires Special Recreation Permit When Meets or Exceeds This Number[3])	30 or more people up to the maximum group size allowed in staging area	30 or more people up to the maximum group size allowed in staging area	30 or more people up to the maximum group size allowed in staging area

[1] SCO = Special Circumstances Only. This type of activity is not suitable for the Zone, however, under special circumstances exceptions may be made.

[2] Overlapping means more than one permit using the same area at the same time.

[3] Other conditions may warrant a special recreation permit, including commercial and competitive events.

i. Dogs must be leashed in pronghorn fawning areas from April to June. (see WF28)

j. Cienega Creek is closed to fishing by Arizona Game and Fish Commission order. (RR15)

k. Recreation activities that damage resources, endanger public health and safety, or litter are prohibited. (RR16)

Note: Conducting simulated combat activities using paint ball guns and smoke bombs is inconsistent with the Leave No Trace land use practices encouraged by BLM and other land management agencies. Leaving empty cartridges, bullets, permanent stains, and other by-products in an area is considered littering or damaging resources and is subject to fines.

5. Interpretive Program

BLM will develop an interpretive program for the planning area by 2005. (AA26)

Table 7. Primary Recreation Activities by Zone, Las Cienegas Resource Management Plan

Zone 1 Roaded Natural	Zone 2 Natural	Zone 3 Backcountry
Sightseeing	Sightseeing	Sightseeing
Visiting historic sites	Camping	Camping
Photography	Visiting historic sites	Visiting historic sites
Day use	Viewing wildlife	Viewing wildlife
	Photography	Photography
	Driving for pleasure	Driving for pleasure
	Picnicking	Picnicking
	Hunting	Hunting
	Equestrian activities	Hiking
	Mountain biking	Backpacking
		Solitude
		Equestrian activities
		Mountain biking

Interpretation is a voice for all resource management objectives and programs in this plan. This program will support the overall vision, goals, and objectives of this plan by serving customers, promoting the health of the land, and enhancing the understanding of this area's natural and cultural resources and its management. This program integrates all resource objectives with prescriptions such as placing signs and other information and education products directed to affect visitor behavior. BLM will provide services for people of all abilities by using diverse media and combining techniques to reach different learning styles, abilities, generations, ethnic groups, and cultures. This program will follow the National BLM Interpretive Strategy (BLM 1999) and do the following:

a. Be thematic and use accepted professional interpretive principles.

b. Be evaluated to measure effectiveness.

c. Ensure that each resource message will be displayed effectively and harmonize with objectives for other resource management programs

d. Collaborate with other groups such as BLM public affairs; neighboring public and state land managers; outfitters; guides; and cooperating associations, friend's groups, and foundations to provide information to diverse audiences.

e. Determine the level and suitability of publicity, marketing, brochures, BLM website information, road signs, maps, and priority resource protection messages as they relate to the planning area's management objectives.

f. Locate and compile basic information on safety and orientation and integrate this information with all resource management objectives and programs, such as recreation opportunities, grazing practices, and creek restoration projects. Methods and styles of communication such as brochures, web pages, signs, and other media selected can be informational, directional, interpretive, or authoritative messages that best minimize impacts to resources and enhance resource protection.

g. Be led by an interpretive specialist or team. Trained interpretive specialists will develop the details of sign styles and exact text, with input from all resource specialists.

6. **Maintenance Program**

An inventory and maintenance management program integrating Las Cienegas prescribed conditions for recreation zones, roads and their maintenance needs will be developed by 2005. (AA27)

The program will include a facility and inventory maintenance management program that will be developed and modified using BLM's Facility Inventory Maintenance Management System (FIMMS) basic structure, however maintenance standards, levels and schedules will be locally defined. The overall maintenance program will integrate the maintenance needs and prescriptions for all resource programs. This will include maintaining informational and regulatory road signs and other infrastructure within the NCA. The program will also include a recreation maintenance plan that will also address trash removal, clean-up procedures and schedules. This plan also determines the degree of scheduled and corrective maintenance for water sources, restoration project components, barricades, parking areas, fences, trails, and administrative sites. Table 8 summarizes maintenance prescriptions for designated routes in the transportation system. Appendix 2 of the PRMP/FEIS includes detailed descriptions of each maintenance level.

7. **Non-Motorized Trails**

In addition to the non-motorized trails designated by transportation and access management actions, an additional non-motorized loop trail is designated in North and Oak Tree Canyons (Map 14). The trail begins and ends at the Air Strip day use area. The trail route crosses about three miles of public land and also crosses several miles of State Trust and Forest Service lands. The route for the return segment of the trail (about 1.5 miles) will be coordinated with the route for the Oak Tree Canyon portion of the Arizona Trail so as not to duplicate trails in this area. For the trail to be implemented, a right-of-way must be obtained from the ASLD and approval for the trail location and development on Forest Service lands will also need to be obtained. (RR17)

8. **Management within Recreation Zones**

Managing visitor use impacts within recreation zones is an important part of maintaining the quality of the desired recreation opportunity settings included in this RMP. Table 2-26 in the PRMP/FEIS summarizes the management prescriptions to be applied to each recreation zone (See Map 5). (RR18)

In addition to these prescriptions, BLM is proposing a step-down approach to managing visitor use impacts. The first step is to begin or increase visitor awareness or education. This more light-handed approach may in many instances be enough to reverse downward trends in resource conditions, including the decline in quality of recreational settings. Visitor education incorporates existing national programs such as Leave No Trace and Tread Lightly. An important part of the education and awareness step is to develop partnerships with user groups to help with education and visitor awareness. If education is unsuccessful, BLM might apply more heavy-handed approaches to reverse downward trends. Such approaches might include restrictions and regulations. BLM will pursue partnerships to help with monitoring and rehabilitation. (RR19)

9. **Designated Recreation Sites**

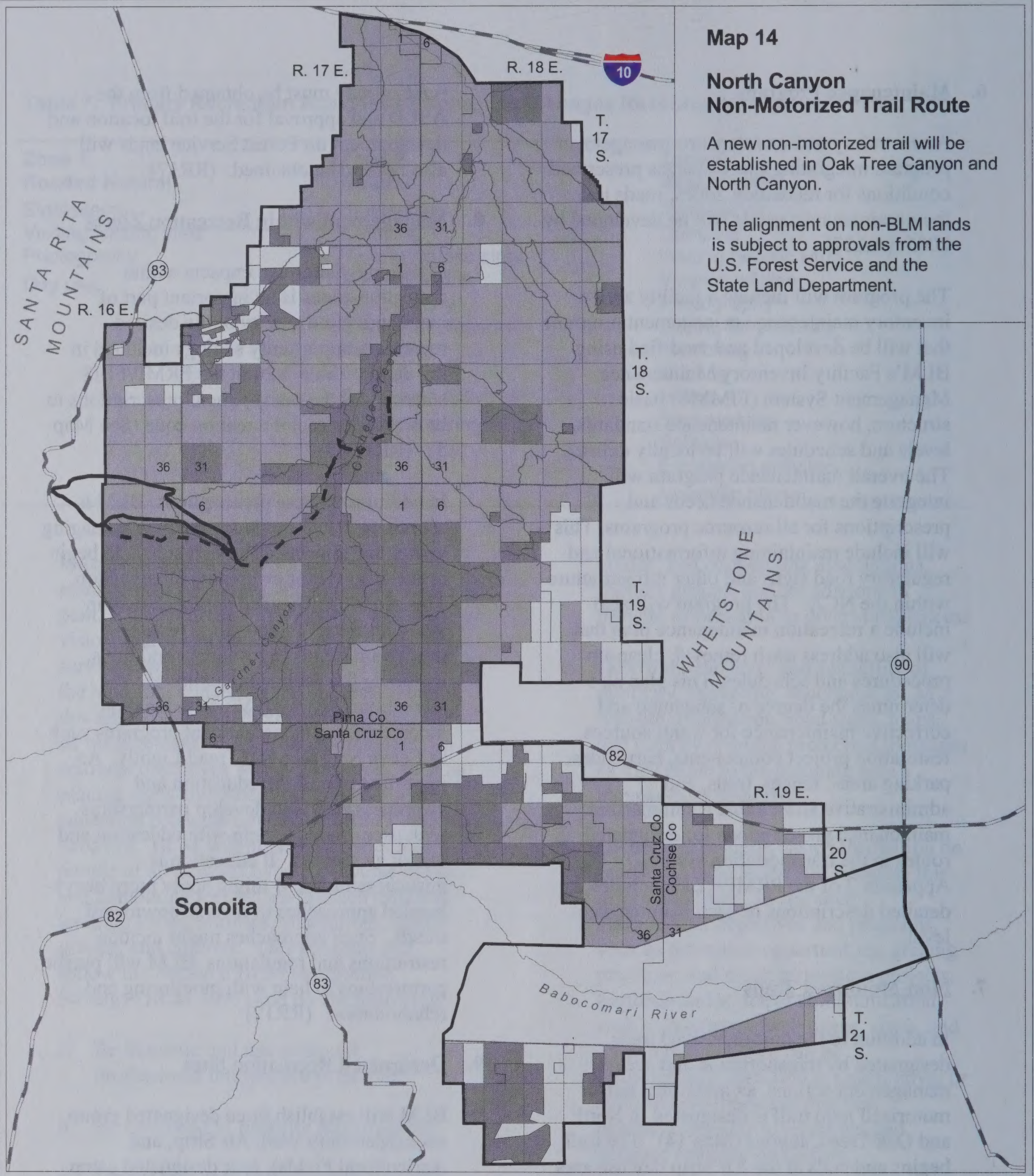
BLM will establish three designated group sites (Maternity Well, Air Strip, and Agricultural Fields), four designated camp areas (Oak Tree, Cieneguita, Oil Well, and Road Canyon), and at least 11 pullouts (Map 15). (RR20)

Map 14

North Canyon Non-Motorized Trail Route

A new non-motorized trail will be established in Oak Tree Canyon and North Canyon.

The alignment on non-BLM lands is subject to approvals from the U.S. Forest Service and the State Land Department.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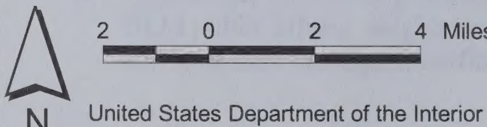
LAS CIENEGAS RESOURCE MANAGEMENT PLAN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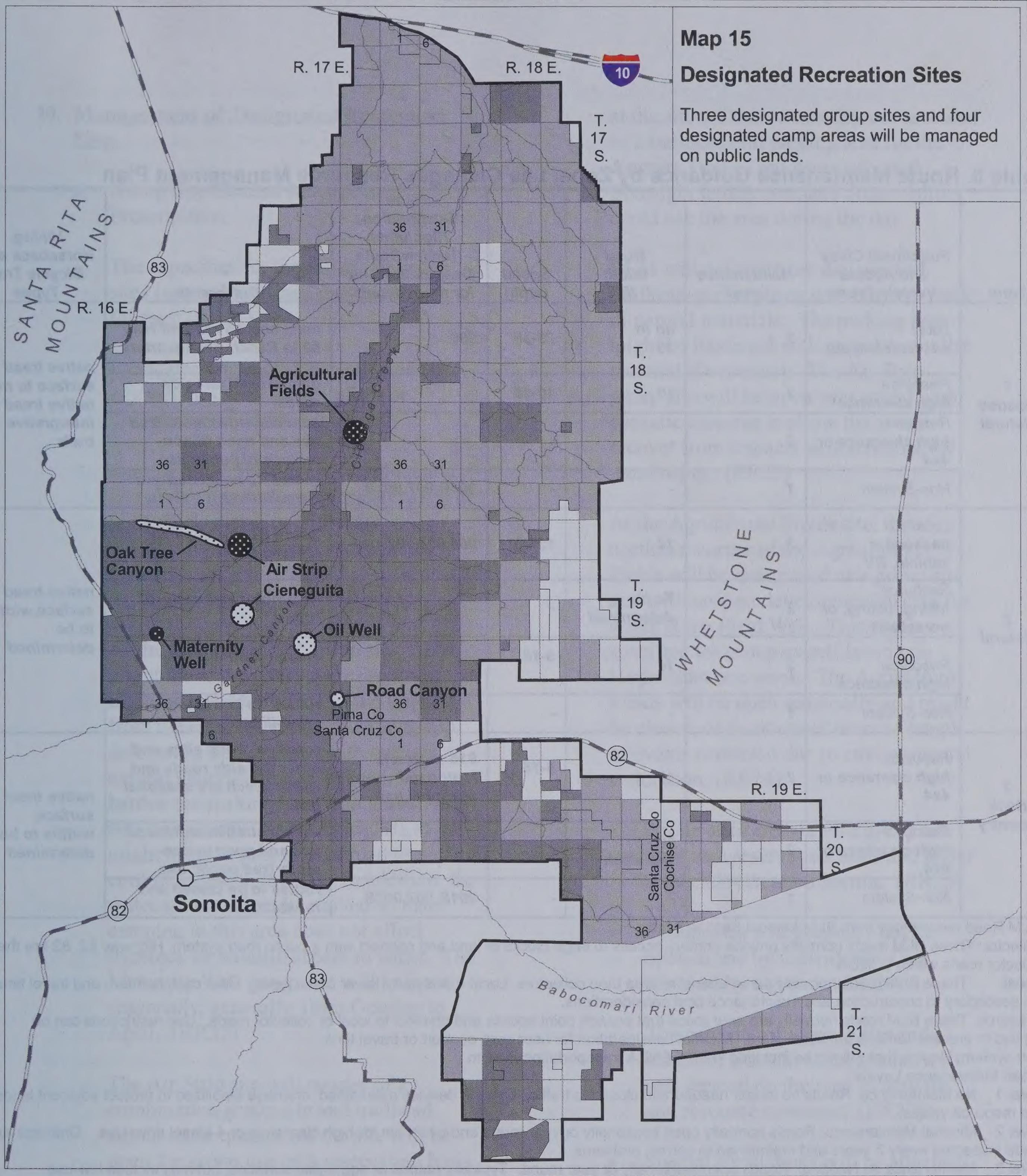
—— North Canyon Trail Route

February 2003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Map 15

Designated Recreation Sites

Three designated group sites and four designated camp areas will be managed on public lands.

LAS CIENEGAS RESOURCE MANAGEMENT PLAN

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LEGEND

— Planning Area Boundary

▨ BLM Land

▨ State Land

☐ Private Land

● Designated Group Site

○ Designated Camp Area

--- Road

February 2003

Table 8. Route Maintenance Guidance by Zone, Las Cienegas Resource Management Plan

Zone	Functional Class[1] and Access Vehicle Types	Maintenance Level[2]	Road Width (ft)	Speed (mph)	Route Designation Highlights (ReviewRoute Designation Map for more details).	Comments	Hiking, Horseback and Bicycle Trail Types
1 Roaded Natural	*Local all vehicle types*	*3*	*up to 20*	*25-35*	*900*	*main access road off Hwy 83 to Ranch Headquarters*	*native tread surface to non-native tread for interpretive trails*
	Resource high clearance	*2*	*10*	*10-15*		*unimproved dirt side roads*	
	Resource high clearance or 4x4	*2*	*-*	*-*		*administrative motorized use and open to non-motorized public use*	
	Non-System	*1*	*-*	*-*	*901B,907,907B*	*routes to be closed and rehabilitated,*	
2 Natural	*Local passenger vehicle, RV*	*3*	*14*	*15-25*	*900,901,902*	*South Road – segment off Hwy 82*	*native tread surface,widths to be determined*
	Resource hiking, biking, or horseback	*2*	*To be determined*	*-*		*non-motorized use year round*	
	Resource high clearance	*2*	*10*	*5-15*		*unimproved dirt side roads3*	
	Non-System	*1*	*-*	*-*		*routes to be closed and rehabilitated,*	
3 Back Country	*Resource high clearance or 4x4*	*2*	*10*	*5-15*	*916 segment, motorized seasonal use*	*roads to group sites and other dirt side roads and roads which are seasonal use*	*native tread surface, widths to be determined*
	Resource high clearance or 4x4	*2*	*10, two track*	*-*		*Administrative motorized use and open to non-motorized public use*	
	Non-System	*1*	*-*	*-*	*901B,907,907B*	*routes to be closed and rehabilitated*	

[1] BLM Road terminology from BLM Manual Section 9113

Collector: These BLM roads normally provide primary access to large blocks of land and connect with a public road system. Highway 82, 82 are the collector roads within LCNCA.

Local: These BLM roads normally serve a smaller area than collectors. Local roads carry fewer traffic types. User cost, comfort, and travel time are secondary to construction and maintenance cost considerations.

Resource: These BLM roads normally are spur roads that provide point access and connect to local or collector roads. Use restrictions can be applied to prevent conflicts between users. Minimal consideration for user cost, comfort or travel time.

Non-system: Routes that will not be included in the LCNCA transportation system.

[2] Road Maintenance Levels :

Level 1 _ No Maintenance: Roads no longer needed and closed to traffic. Closure devices maintained, drainage stabilized to protect adjacent lands and resource values.

Level 2 _ Minimal Maintenance: Roads normally open seasonally or year-round and passable for high clearance or 4-wheel drive use. Drainage and grade inspected every 3 years and maintained to correct problems.

Level 3 _ Maintenance as Needed: Roads open seasonally or year round. Typically natural or aggregate surfaced, but may include low-use bituminous surface, with defined cross-section and drainage. Generally passable by passenger car, but user comfort and convenience are not a high priority. Drainage inspected at least annually and maintained as needed. Grading conducted to provide a reasonable level of riding comfort.

Level 4 _ Annual maintenance. Roads open all year, except may be closed or have limited access seasonally. Typically single or double lane, aggregate, or bituminous surface, with a higher volume of public traffic than administrative traffic. Roadway maintained at least annually, although a preventative maintenance program may be established. Problems repaired as discovered.

[3] Unimproved dirt side roads in Zones 1 and 2 transition to Zone 3 after 1/4 mile from intersection with roads 900, 901, 902.

10. __Management of Designated Recreation Sites__

a. Group Site General Management Prescriptions

The capacities for the following group sites (general guidance only) are as follows: (RR21)

- __Maternity Well__: 150 people or 30 vehicles with horse trailers or recreational vehicles.
- __Air Strip__: 500 people (combination of day use and group use areas). The vehicle capacity in the day use/trailhead area is 30 vehicles.
- __Agricultural Fields__: 500 people.

At the Maternity Well group site, BLM might move the parking area south of the existing corral to reduce visual impacts from the entrance road. BLM will also delineate a parking area with barriers of natural materials and, if needed, may harden the parking area with gravel or similar materials. If necessary, BLM might install a gate on this road to control access to the site. In addition, the water source might be moved so that camping in this area does not affect livestock or wildlife access to water. The Maternity Well group site will be open seasonally, generally, from October to April. (RR22)

The Air Strip site will consist of a combination group site and trailhead. About three-quarters of the site will be open for group use on a reservation basis but will not be open to individual use. About a third of this group area will consist of an overflow area for larger group events. BLM will reclaim and revegetate the site as needed to minimize bare ground, reduce visual impacts, and create more desirable camping opportunities. The remaining one-quarter at the site will serve as a day use area and as a trailhead and parking area for the Arizona Trail. Trail users may park overnight in this area, and other visitors could use the area during the day.

BLM will delineate the day use and trailhead-parking area with barriers made of natural materials. The parking area might be hardened with gravel or similar material if necessary. The Air Strip group site will be open year round with periodic closures to allow the area to recover from impacts as determined by monitoring. (RR23)

At the Agricultural Fields site, the northeast corner of the Agricultural Fields will be designated as a group site and will have no development except for water at the Field Well. This site is specified for group events lasting no longer than one week. The Agricultural Fields will be open seasonally and might be closed, or numbers of users or length of events restricted due to environmental restoration. (RR24)

- Group sites are open for group use only on a reservation basis and under a special recreation permit. (RR25)
- Group sites will generally not be open to use by individuals if not reserved by a group. (RR26)
- The capacity of a group site and length of a single event at such a site will depend on the type of activity and resource concerns. (RR27)
- Special stipulations will be attached to group activities at these sites through the special recreation permit process. (AA28)
- BLM might seasonally or temporarily close group sites in response to resource conditions or other concerns. (RR28)

- Any improvements or developments at the sites must conform to the overall management prescription for the zone in which the site occurs. (RR29)
- Permit holders may bring in portable improvements, but must remove these at the close of the event. (RR30)
- BLM will monitor impacts from group sites to determine if it needs to adjust the site management. (AA29)
- To minimize the potential for recreationists spreading disease to Chiricahua leopard frogs, the Maternity Well or Airstrip group sites will be used before the Agricultural Fields Group Site. If water is present in Cienega Creek near the Agricultural Fields Group Site when it is used, the group's access to Cienega Creek will be limited. (TC13)
- To minimize the potential for recreationists impacting Southwestern willow flycatchers, the Maternity Well or Airstrip sites will be used if nesting flycatchers are present at the Agricultural Fields Group Site and access by organized groups to the area will also be limited. (TC14)

b. Designated Camp Areas General Management Prescriptions

The designated camping areas all have similar management prescriptions.

- These areas will be open for individual, but not group use (groups are defined as more than 29 people). The capacity of each camping area is expected to be less than 30 people. (RR31)
- The most vehicles allowed on each individual site within the camping area will vary, depending on the site. Some sites will be limited to one vehicle. Other sites will be suitable for four to five vehicles. (RR32)
- BLM will restrict the type of activity to camping and limit development in each camping area to posting site numbers, erecting barriers of natural materials, if needed, and placing signs, which will be kept to a minimum. (RR33)
- BLM proposes no other development and may seasonally close any of these sites in response to resource conditions. (RR34)
- The Road Canyon site will be closed during pronghorn fawning season (April-June). (RR35)
- The Oak Tree designated camping area has a few special stipulations;
    - ◦ Development of this area will consist of creating designated camping sites and parking spots to prevent people from parking under oak trees. (RR36)
    - ◦ To deter campers from building fires under the oaks, BLM will establish fire rings away from the trees and erect vehicle barriers. (RR37)
    - ◦ BLM will also post educational signs to inform visitors about oak tree ecology and how parked cars and campfires harm the oaks. (RR38)

c. Pullouts General Management Prescriptions

- Pullouts will consist of widened areas along roadways. (RR39)

- They will be marked, if necessary, with signing and barriers of natural materials. (RR40)
- The pullouts will be designed for vehicles to turn around in or for three to five vehicles to park in. (RR41)
- Camping will not be permitted at pullouts. (RR42)

11. **Designated Road Crossings**

The route designations (Map 4) limit motorized vehicles to four crossings of Cienega Creek (only one across perennial section) and one crossing of Empire Gulch (only one across perennial section) (See Table 5). There are two additional designated non-motorized crossings on Cienega Creek or Empire Gulch. (RR43)

The speed limit will be reduced to 10 mph at the EC901 crossings at Empire Gulch and Cienega Creek, and at the EC910D crossing at the Narrows (until this crossing is closed and rehabilitated) and the speed limit will be posted at each crossing to reduce the impacts of vehicles on Chiricahua leopard frog, desert pupfish, Gila chub, Gila topminnow, and Southwestern willow flycatcher. (see TC02)

Mineral Resources Management Actions

1. **Administrative Use of Mineral Materials**

BLM will use mineral materials such as clay, sand, gravel, and boulders for projects within the planning area. Surface disturbance from removal of the mineral material will be limited to one-half acre or less for each project. Mineral materials will be used for road repair/maintenance, watershed improvement, and cultural resources restoration. Mineral materials will be extracted so as to avoid sensitive areas and minimize impacts. BLM will analyze impacts from administrative use of mineral materials on a case-by-case basis. (MI06)

2. **Casual Use of Mineral Materials**

Removal of mineral materials for personal or commercial use will not be permitted. (MI07)

3. **Rockhounding**

Rock collectors will follow BLM Arizona guidelines for collecting reasonable amounts of mineral specimens, rocks, and semiprecious gemstones. These guidelines allow collecting specimens for noncommercial personal use,--up to 25 pounds and one piece per day not to exceed 250 pounds per year. Mechanical means may not be used to remove rocks or mineral specimens. Collection of petrified wood or fossils (invertebrate or vertebrate) will not be permitted except where intended for legitimate scientific uses as described below. (MI08)

4. **Scientific Collection**

Collection of paleontological resources and rocks will be allowed for legitimate scientific uses when covered by an approved research permit. Mechanical means may be used to remove rocks or mineral specimens for scientific collection subject to compliance with the NEPA. (MI09)

Livestock Grazing Management Actions

Arizona Guidelines for Grazing Administration

The Arizona Guidelines for Grazing Administration are a series of management practices used to ensure that grazing activities meet *the Standards for Rangeland Health* that were included under the Desired Future Conditions section.

Guidelines for Standard 1

1-1. Management activities will maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability appropriate for the ecological sites within management units. The ground cover should maintain soil organisms and plants and animals to support the hydrologic and nutrient cycles, and energy flow. Ground cover and signs of erosion are surrogate measures for hydrologic and nutrient cycles and energy flow. (GM03)

1-2. When grazing practices alone are not likely to restore areas of low infiltration or permeability, land management treatments may be designed and implemented to attain improvement. (GM04)

Guidelines for Standard 2

2-1. Management practices maintain or promote sufficient vegetation to maintain, improve or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability, thus promoting stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform. (GM05)

2-2. New facilities are located away from riparian-wetland areas if they conflict with achieving or maintaining riparian-wetland function. Existing facilities are used in a way that does not conflict with riparian-wetland functions or are relocated or modified when incompatible with riparian-wetland functions. (GM06)

2-3. The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect ecological functions and processes. (GM07)

Guidelines for Standard 3

3-1. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands, non-intrusive, non-native plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, (c) cannot achieve ecological objectives as well as non-native species, and/or (d) cannot compete with already established non-native species. (GM08)

3-2. Conservation of Federal threatened or endangered, proposed, candidate, and other special status species is promoted by the maintenance or restoration of their habitats. (GM09)

3-3. Management practices maintain, restore, or enhance water quality in conformance with State or Federal standards. (GM10)

3-4. Intensity, season and frequency of use, and distribution of grazing use should provide for growth and reproduction of those plant species needed to reach desired plant community objectives. (GM11)

3-5. Grazing on designated ephemeral (annual and perennial) rangeland may be authorized if the following conditions are met: (GM12)

- ephemeral vegetation is present in draws, washes, and under shrubs and has grown to useable levels at the time grazing begins;
- sufficient surface and subsurface soil moisture exists for continued plant growth;
- serviceable waters are capable of providing for proper grazing distribution;
- sufficient annual vegetation will remain on site to satisfy other resource concerns, (i.e., watershed, wildlife, wild horses and burros); and
- monitoring is conducted during grazing to determine if objectives are being met.

3-6. Management practices will target those populations of noxious weeds that can be controlled or eliminated by approved methods. (GM13)

3-7. Management practices to achieve desired plant communities will consider protection and conservation of known cultural resources, including historical sites, and prehistoric sites and plants of significance to Native American peoples. (GM14)

General Livestock Management Strategies

As described in the Land Use Allocation section, four livestock operators will continue to lease public lands in the planning area on four individual grazing allotments (Empire-Cienega, Empirita, Rose Tree, and Vera Earl). In addition, BLM will establish a livestock grazing allotment in the Empire Mountains. (see GM01)

For each allotment the following general management prescriptions will be implemented:

1. Continue flexible livestock rotation under selective rest-rotation strategy as described in the general grazing management prescriptions. Within the forage allocation (permitted use), authorized use will be varied annually based on an assessment of range conditions, including forage availability and biological monitoring through the biological planning process. Forage temporarily available above the forage allocation (permitted use) may be apportioned on a non-renewable basis. Any active use below the permitted use, which is recommended through the biological planning process may be applied for as temporary non-use subject to approval by the authorized officer. The variable annual use levels will be achieved through Terms and Conditions applied to the grazing leases. Changes in permitted use will be based on inventory and monitoring data. (GM15)

2. On each allotment, BLM will implement a utilization limit of 30-40% of current year's growth on key perennial grass species and assure that the physiological requirements of plant growth, rest, and reproduction are met for the following key species to ensure progress towards meeting land health standards and multiple use objectives: (GM16)

   __Perennial Grasses:__
   Plains Lovegrass (ERIN)
   Sideoats Grama (BOCU)
   Cane Beardgrass (BOBA3)
   Vine Mesquite (PAOB)
   Blue Grama (BOGR)
   Black Grama (BOER4)
   Hairy Grama (BOHI2)
   Sprucetop Grama (BOCH)
   Plains Bristlegrass (SEMA)
   Wooly Bunchgrass (ELBA)
   Green Sprangletop (LEDU)
   Arizona Cottontop (DICA8)
   Crinkleawn (TRMO)
   Bush Muhly (MUPO2)
   Prairie Junegrass (KOCR)

   Descriptions of the methodologies for monitoring utilization are included in Appendix 9.

3. The biological planning process will be expanded and formalized on the Empire-Cienega allotment and similar biological planning processes will begin for the other allotments. (AA30)

   a. The biological planning processes will have the following general structure:

      - The current Biological Planning Team which has been active on the Empire-Cienega allotment will be reorganized as a separate Rangeland Resource Team (RRT) with a Technical Review team (TRT) operating under the auspices of the Arizona Resource Advisory Council (RAC) and BLM as provided for in 43 CFR 1784.6-2(iv) [or optionally, another type of formal advisory group if needed in the future].

      - Under the Biological Planning Process, the RRT and TRT help the BLM review the monitoring data and provide recommendations on proposed actions. The BLM Field Manager will make any necessary administrative decisions relating to the grazing program after review of existing data and after consultation and coordination with the Biological

Planning Team (RRT and TRT) and other interested agencies and public.

Actions--The team will generally meet at least twice a year (in March or April before the spring growing season and in September following the monsoon rains) to do the following:

- Evaluate monitoring data including:
    - ◦ Precipitation
    - ◦ Rangeland ecological site (range) condition
    - ◦ Riparian and aquatic condition
    - ◦ Vegetation trends
    - ◦ Vegetation utilization
    - ◦ Soil cover
    - ◦ Wildlife populations and habitats
    - ◦ Livestock pasture use records
    - ◦ Livestock pasture recovery (new production)
    - ◦ Recreation post-use reports

- Evaluate proposed grazing and recreation actions in light of the objectives in this plan and current resource conditions or concerns.

- Recommend adjustments to management on the following:
    - ◦ Changes in recreation authorizations or site uses.
    - ◦ Annual Grazing Management practices and grazing use levels.

4. The interim grazing plan for the Empire-Cienega allotment (BLM 1995) and the Coordinated Grazing Management Plan for the Empirita allotment will be modified to incorporate the goals, objectives, and actions in this plan. BLM will develop grazing management plans for the Rose Tree, Vera Earl, and Empire Mountains allotments. (AA31)

5. BLM will develop additional exclosures on allotments and monitor these non-grazed lands to determine the effects of grazing and rest on habitats. (GM17)

6. BLM will authorize grazing use in riparian pastures and exclosures only at designated livestock crossing lanes and watering areas or to meet resource objectives. (GM18)

Empire-Cienega Allotment (#6090) Management

Summary of RMP Allocation

Forage allocated (Permitted use) on the Empire-Cienega allotment is 8,448 AUMs of livestock forage on about 34,365 acres of public land. (see GM01)

About 2,319 acres (6%) of the BLM lands on the Empire-Cienega allotment will be excluded from livestock grazing as vegetation study areas. The exact number of excluded acres may vary depending on the number, size, and location of study exclosures that will be developed to help evaluate the effectiveness of grazing management. In addition, BLM intends to continue to sublease livestock grazing on the 37,462 acres of State Trust lands leased to BLM.

Empire-Cienega Allotment Livestock Grazing Management Actions

1. Continue flexible livestock rotation using a selective rest-rotation strategy as described in the general grazing management prescriptions. Within the forage allocation (permitted use), authorized use will be varied annually based on an assessment of range conditions, including forage availability and biological monitoring through the biological planning process. Forage temporarily available above the forage allocation (permitted use) may be apportioned on a non-renewable basis. Any active use below the permitted use, which is recommended through the biological planning process, may be applied for as temporary non-use subject

to approval by the authorized officer. The variable annual use levels will be achieved through Terms and Conditions applied to the grazing leases. Changes in permitted use will be based on inventory and monitoring data (see GM15).

2. Reduce utilization to 30-40% of current year's growth on key perennial grasses as described in the general grazing management prescriptions (see GM16).

3. Modify the current biological planning process including establishing the RRT and TRT as described in the general grazing management prescriptions. (see AA30)

4. Modify the current grazing management plan to incorporate changes to biological planning process, flexible grazing strategy, additional study exclosures, and anticipated range improvement projects. (see AA31)

5. Establish study exclosures on the approximately 2,319 acres of public lands not allocated to livestock grazing by constructing perimeter fencing (GM19). Monitor these non-grazed lands to determine the effects of grazing and rest on habitats. (AA32)

6. Construct the range improvement projects summarized in Tables 9 and 10, and shown on Map 16. Additional range improvements might be proposed and constructed in the future based on results of ecological monitoring and/or livestock management needs. (GM20)

The following management prescriptions will be implemented as terms and conditions that will be attached to the grazing lease.

7. Levels of grazing use and grazing practices will be determined annually through the biological planning process as approved by the authorized officer and described in the Las Cienegas RMP (GM21)

8. The fences of all exclosures that have occupied Chiricahua leopard frog, desert pupfish, Gila chub, Gila topminnow and/or Southwestern willow flycatcher habitat will be checked at least once when the adjacent pasture is being used. If there is a problem with the fence, and livestock are in that pasture, the fence will be repaired within one

Table 9. Summary of Anticipated Fencing, Empire-Cienega Allotment, Las Cienegas Resource Management Plan.

Project Name	Pasture	Township	Range	Section
Spring Water Sacaton Fence	E 500 Acre & 5 Wire & Mac's	19 S 18 S	17 E 17 E	2, 11 34, 35
Lower 49 Sacaton Fence	Lower 49/500 Acre & 5 Wire	18 S	17 E	26 NW, 27 NE
Lower Mattie Sacaton Fence	L. Mattie/Fresno	18 S	17 E	13, 23, 24, 25, 26
Rockhouse Riparian Fence	Rockhouse/Apache	18 S 18 S	18 E 17 E	6, 7. 12, 13
Narrows Riparian Fence	Empirita	18 S	18 E	6
Upper Apache Div. Fence	18 S	18 E	22, 27, 34	3 mi. Fence
Test Hole Wing Fence	18 S	18 E	28, 33	1 mi. Fence
Hilton Pasture Fence	Not Determined			
Road Canyon Div. Fence	Not Determined			

Table 10. Summary of Anticipated Empire-Cienega Allotment Water Developments, Las Cienegas Resource Management Plan

Project Name	Township	Range	Section	Units
Lower 49 Well Drill Equipment, Tank, and Fence	18 S	17 E	27, 23, 26, 27	1 Well and Tank 1.5 mi. Fence
Enzenburg North Well and/or Sam's Well Project	18 S	17 E	34 NW	1
Mud Springs Well Drill, Equipment, and Tank	19 S	18 E	29 NE	1 Each
Upper 49 Well Redrill, Equipment and Tank, or Reservoir Construction	18 S	17 E	26 NW	1 Each
Upper Road Canyon Well Drill, Equipment, Tank and Fence	19 S	17 E	16 NE 26, 27, 35, 36	1 Well 2 Tanks 3 mi. Fence

week of the fence problem being discovered. If cattle are not in the adjacent pasture, the fence will be repaired before livestock are returned to the pasture. (TC15)

9. All personnel performing maintenance at any creek crossing will be informed of the potential presence of Chiricahua leopard frogs, desert pupfish, Gila Chub, Gila topminnow, and/or Southwestern willow flycatcher, the status of each species, and the need to perform their duties to avoid impacts to the species and their habitats. (TC16)

10. All new repressos will be located to minimize the likelihood of floods moving nonindigenous aquatic species into Chiricahua leopard frog, desert pupfish, Gila chub, and/or Gila topminnow habitat by adhering to the following guidelines:

    a. New repressos should be located outside of the current 100-year floodplain when possible (TC17);

    b. Repressos shall be constructed so runoff from precipitation captured by each represso is minimal (TC18);

    c. The maximum water depth in a represso may not exceed four feet at any spot (TC19);

    d. The repressos shall be used only when required to water cattle and shall be allowed to dry when no longer needed to water cattle (TC20);

    e. If repressos do not dry within six months after use ends, they shall be drained. Before draining, check for Chiricahua leopard frogs. If frogs are present, maintain the pond and remove any nonindigenous aquatic species that may be present (TC21); (Note: The BLM will be responsible for any required draining of repressos not related to the livestock operation.)

    f. Repressos should be located so access to the public, and potential for unauthorized release of nonindigenous species, is minimized (TC22);

    g. Coordinate with the Service on citing of new repressos, consider the location based on an analysis of permanency and likelihood of contributing to spread of disease or nonnatives, or contributing to Chiricahua leopard frog metapopulation dynamics. (TC23)

11. Continue to implement the following measures to protect populations of Gila topminnow and Gila chub and their habitats from grazing impacts:

Table 11. Livestock Crossing Lanes and Watering Areas, Empire-Cienega Allotment, Las Cienegas Resource Management Plan

Crossing Lane	Legal Location	Type	Pasture
Upper Empire Gulch	T.18S, R.17E, Sec. 17	Crossing Lane	Empire/Orchard
Headwaters	T.19S, R.17E, Sec. 15	Crossing Lane	5 Wire, Hilton Sacaton
Gardner	T. 19S, R. 17E, Sec. 10	Crossing Lane	500 Acre, 5 Wire
EC-900 Old Road Crossing (Hardened)	T. 18S, R. 17E, Sec. 35	Crossing Lane	Mac's Sacaton, North
49 (A & B Gaps)	T. 18S, R. 17E, Sec. 2	Watering Area/Crossing Area	Mac's Sacaton, Lower 49
Fresno	T. 18S, R. 17E, Sec. 23	Crossing Lane	Fresno, 49, Rockhouse
Dominguez	T. 18S, R. 17E, Sec. 13	Crossing Lane	Rockhouse, Fresno
Dominguez -Narrows	T.18S, R.17E, Sec.12 & 13 T.18S, R.18E, Sec. 6 & 7	Watering Area - Winter Use Only	Rockhouse, A3, Apache

Crossing lane locations may be adjusted in the future based on ecological monitoring or if needed to improve livestock management.

a. Limit livestock use in riparian areas of Cienega Creek, Mattie Canyon, and Empire Gulch with perennial water to the crossing lanes and watering areas listed in Table 11 and shown on Map 17, and areas where BLM, through the biological planning process, determines a need to use livestock grazing as a management tool to meet a riparian or aquatic-related resource objective. (GM22)

b. Rotate use of crossing lanes and move cattle through them within 21 days. (GM23)

c. Minimize impacts to Gila topminnow and Gila chub from use of creek crossings and watering areas by livestock through the following (TC24):

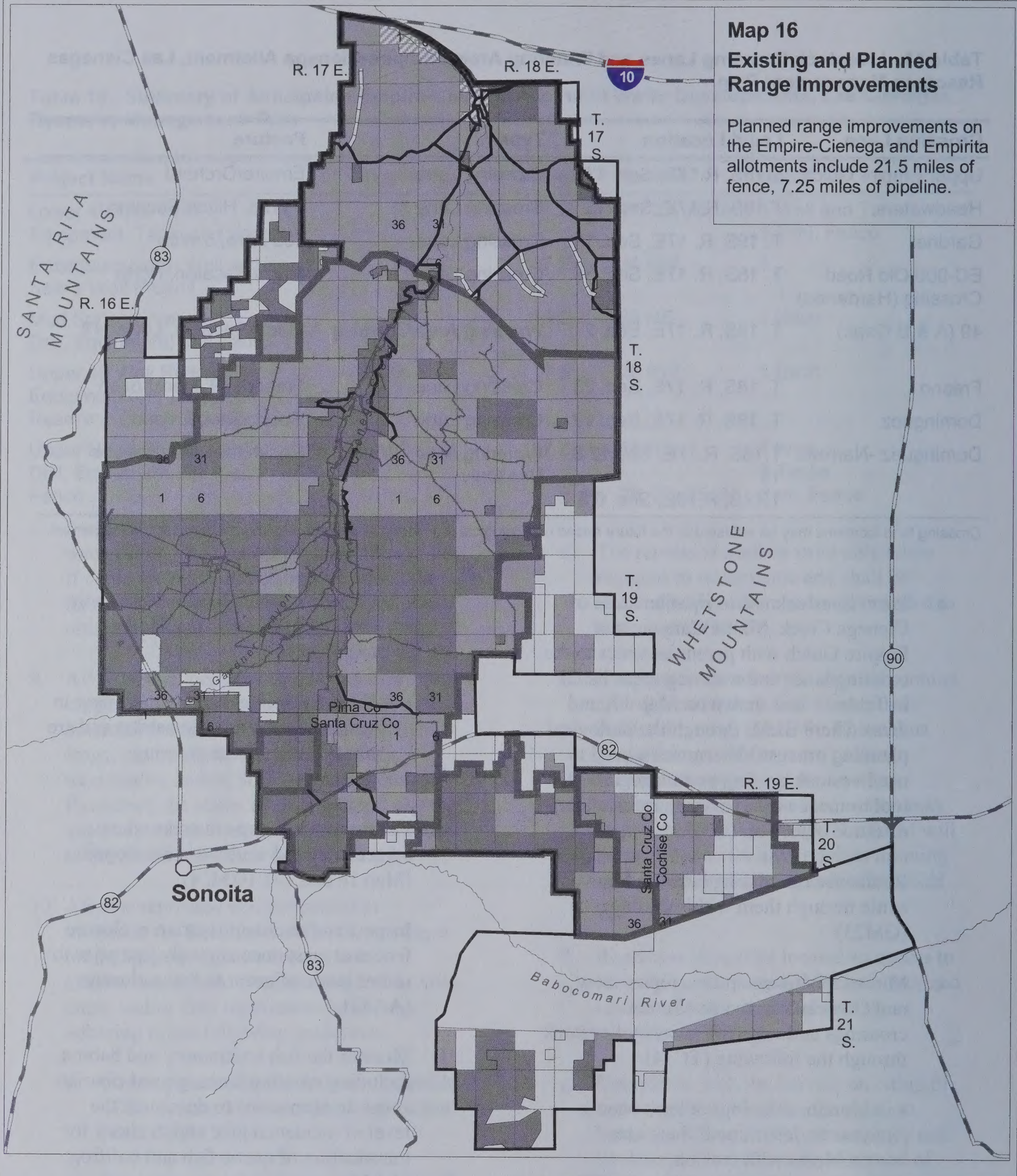
  - Monitor crossings at least once a year to determine if there are problems with erosion, sedimentation, vegetation condition, or any other resource conditions;
  - When considering which creek crossings to use for livestock, avoid crossings which are known to be occupied by Gila topminnow and Gila chub when possible (presently, most crossing are occupied by topminnow);
  - Ensure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly;

d. Phase out water gaps in areas where adjacent upland waters are developed (Map 16 and 17). (GM24)

e. Inspect and maintain riparian exclosure fences at least once annually just prior to use of lands adjacent to the exclosures. (AA33)

f. Monitor the fish community and habitat, including crossing lanes, grazed riparian zones and repressos to document the level of incidental take and to check for introduction of exotic fish and bullfrog. (AA34)

g. Develop mitigation plans in coordination with the USFWS for range improvements and vegetation treatments that may harm the topminnow or chub or their habitats. (AA35)



Map 16

Existing and Planned Range Improvements

Planned range improvements on the Empire-Cienega and Empirita allotments include 21.5 miles of fence, 7.25 miles of pipeline.

R. 16 E.
R. 17 E.
R. 18 E.
R. 19 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
10
83
82
90
SANTA RITA MOUNTAINS
WHETSTONE MOUNTAINS
Gardner Canyon
Cienega Creek
Pima Co
Santa Cruz Co
Cochise Co
Sonoita
Babocomari River
36
31
1
6

LAS CIENEGAS RESOURCE MANAGEMENT PLAN

N
2 0 2 4 Miles
LEGEND
Planning Area Boundary
BLM Land
State Land
Private Land
Grazing Allotment Boundary
Pipeline, Existing
Fence, Existing
Pipeline, Planned
Fence, Planned

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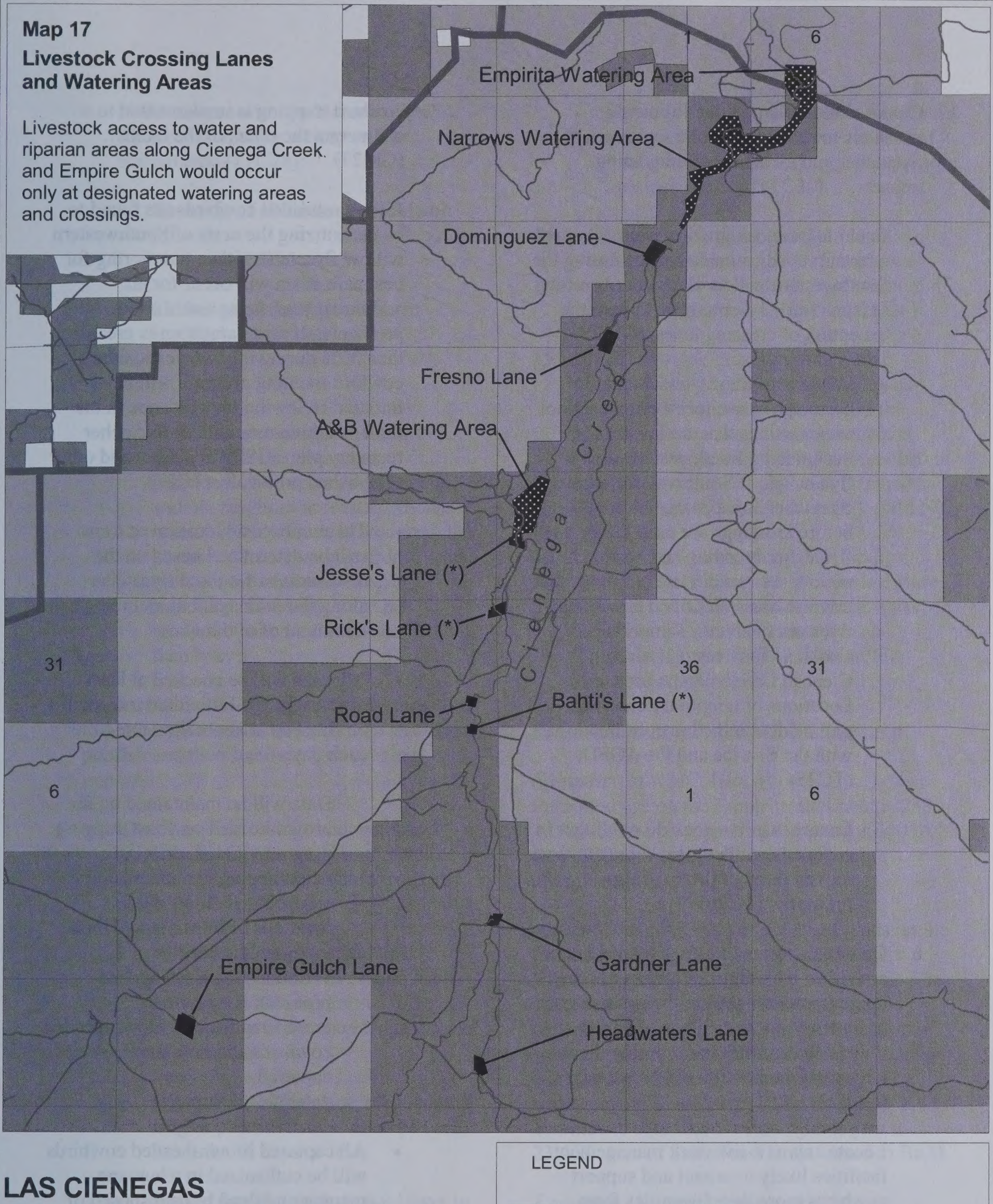
TUCSON FIELD OFFICE

February 2003



Map 17

Livestock Crossing Lanes and Watering Areas

Livestock access to water and riparian areas along Cienega Creek and Empire Gulch would occur only at designated watering areas and crossings.

Empirita Watering Area
Narrows Watering Area
Dominguez Lane
Fresno Lane
A&B Watering Area
Cienega Creek
Jesse's Lane (*)
Rick's Lane (*)
Road Lane
Bahti's Lane (*)
Gardner Lane
Empire Gulch Lane
Headwaters Lane
1
6
31
36
31
6
1
6
0.5
0
0.5
1 Miles
N

LAS CIENEGAS RESOURCE MANAGEMENT PLAN

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TUCSON FIELD OFFICE

LEGEND

▨ BLM Land	▭ Grazing Allotment Boundary
▨ State Land	▨ Livestock Watering Area
☐ Private Land	■ Livestock Crossing Lane
	— Existing Road
	* Existing crossing lane will be elliminated.

February 2003

12. Continue to implement the following measures to protect the Southwestern willow flycatcher and its habitat from grazing impacts:

    a. Exclude livestock grazing from occupied or unsurveyed, suitable habitat during the Southwestern willow flycatcher-breeding season (April 1-September 1) with the exception of crossing lanes. (GM25)

        - When considering which creek crossings to use for livestock, do not use crossings that are known to be occupied by Southwestern willow flycatcher. If Southwestern willow flycatcher surveys are not done before crossings are used during the flycatcher breeding and nesting period, then do not use crossings that traverse areas identified as suitable flycatcher habitat. Temporary crossings for livestock across Cienega Creek may be used. Locations of temporary crossings will be determined in coordination with the Service and the AGFD; (TC25)

        - Ensure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly; (TC26)

    b. Do not authorize livestock management activities, including development of range improvements, in the riparian zone of unsurveyed, suitable or occupied willow flycatcher habitat during the willow flycatcher-breeding season. (GM26)

    c. Locate any new livestock management facilities likely to attract and support cowbirds more than five miles from occupied, suitable, or potential flycatcher habitat, unless such facilities are crucial to protecting riparian habitat, and cowbird trapping is implemented to counteract the effect of the facility. (GM27)

    d. If brown-headed cowbirds are found to be parasitizing the nests of Southwestern willow flycatchers, then monitoring for nest parasitism will occur for an additional year, using established protocols. If nest parasitism is greater than 30% during the two years, then a cowbird trapping program will be initiated following the guidance in the draft Southwestern willow flycatcher recovery plan (USFWS 2002c) and other established protocols. (TC27)

        - The number and location of traps will be determined based on the distribution of willow flycatcher along the drainage, but including a minimum of two traps;

        - All traps will be checked at least once each day; individual traps will be checked at about the same time each day;

            - ◦ Data will be maintained on the brown-headed cowbird trapping program, including:
            - ◦ date trapping is initiated and stopped;
            - ◦ locations of traps marked on a topographic map;
            - ◦ variations from established protocol;
            - ◦ number and sex of brown-headed cowbirds and non-target species captured;
            - ◦ date of each capture;

        - All captured brown-headed cowbirds will be euthanized in a humane manner and dead birds disposed of properly;

        - BLM will report to USFWS each year on the survey and trapping program.

e. In the pasture with the Narrows, one of the three following actions will be implemented (TC28):

    - Removal of all livestock by March 30;

      OR

    - Exclusion of the Narrows from livestock grazing all year;

      OR

    - In the riparian corridor that is still open to grazing, grass and herbaceous vegetation will have a stubble height of at least six inches when livestock are removed from the pasture. The riparian corridor includes the high terrace with mesquite. Livestock must be removed from the pasture not later than May 1.

13. Implement the following additional measures to protect Chiricahua leopard frogs and desert pupfish and their habitats from grazing impacts:

    a. Use of creek crossings and watering areas for livestock should minimize impacts to Chiricahua leopard frogs and desert pupfish (TC29);

    - When considering which creek crossings to use for livestock, avoid crossings which are known to be occupied by Chiricahua leopard frogs or desert pupfish;
    - If a crossing within occupied leopard frog or pupfish habitat must be used, use it for 14 days or less;
    - Ensure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly;

    b. BLM will build a partial exclosure fence at Cinco Ponds to minimize the loss of Chiricahua leopard frog egg masses from livestock grazing. (TC30)

14. Adjust livestock grazing rotation and utilization and develop more fencing, as needed, to meet watershed cover required in the upland vegetation objective. (GM28)

15. Adjust livestock grazing rotation and utilization and develop more fencing, as needed, to leave enough cover after the summer livestock rotation to meet cover needs for pronghorn fawning as described in the pronghorn habitat objective (Upland Wildlife Habitat Sub-Objective B). (GM29)

16. Adjust grazing rotation by developing a North-South Hilton pasture fence to ensure adequate cover for grassland sparrows as defined in the grassland sparrow sub-objective (Upland Wildlife Habitat Sub-Objective A). (GM30)

Empirita Allotment (#6210) Management

Summary of RMP Allocation

Permitted use on the Empirita allotment is 288 AUMs of livestock grazing forage on 1,000 of the 1,520 acres of public lands within the allotment. (see GM01)

About 520 acres (34%) of the BLM lands on the Empirita allotment will be excluded from livestock grazing as vegetation study areas. The exact number of excluded acres may vary depending on the number, size, and location of study exclosures that will be developed to help evaluate the effectiveness of grazing management. In addition, BLM intends to continue to sublease livestock grazing on the 23,468 acres of State Trust lands leased to BLM.

Empirita Allotment Livestock Grazing Management Actions

1. Continue flexible livestock rotation using a selective rest-rotation strategy as described in

the general grazing management prescriptions. Within the forage allocation (permitted use), authorized use will be varied annually based on an assessment of range conditions, including forage availability and biological monitoring through the biological planning process. Forage temporarily available above the forage allocation (permitted use) may be apportioned on a non-renewable basis. Any active use below the permitted use, which is recommended through the biological planning process, may be applied for as temporary non-use subject to approval by the authorized officer. The variable annual use levels will be achieved through Terms and Conditions applied to the grazing leases. Changes in permitted use will be based on inventory and monitoring data (same as GM15).

2. Reduce utilization to 30-40% of current year's growth on key perennial grass species in the general grazing management prescriptions (same as GM16).

3. Implement a biological planning process on the Empirita allotment as described in the general grazing management prescriptions. (same as AA30)

4. Modify the current grazing management plan to incorporate flexible grazing strategy, the biological planning process, and the building of fencing and water developments to develop riparian pastures at the Narrows and around Nogales Spring. (same as AA31)

5. Establish study exclosures on the approximately 520 acres of public lands not allocated to livestock grazing by constructing perimeter fencing (GM31). Monitor these non-grazed lands to determine the effects of grazing and rest on habitats. (AA36)

6. Develop the range improvements shown on Map 16. Additional range improvements may be proposed and constructed in the future based on results of ecological monitoring and/or livestock management needs. (GM32)

The following management prescriptions will be implemented as terms and conditions that will be attached to the grazing lease.

7. Levels of grazing use and grazing practices will be determined annually through the biological planning process as approved by the authorized officer and described in the Las Cienegas RMP (same as GM21).

8. The fences of all exclosures that have occupied Chiricahua leopard frog, desert pupfish, Gila chub, Gila topminnow and/or Southwestern willow flycatcher habitat will be checked at least once when the adjacent pasture is being used. If there is a problem with the fence, and livestock are in that pasture, the fence will be repaired within one week of the fence problem being discovered. If cattle are not in the adjacent pasture, the fence will be repaired before livestock are returned to the pasture. (same as TC15)

9. All personnel performing maintenance at any creek crossing will be informed of the potential presence of Chiricahua leopard frogs, desert pupfish, Gila Chub, Gila topminnow, and/or Southwestern willow flycatcher, the status of each species, and the need to perform their duties to avoid impacts to the species and their habitats. (same as TC16)

10. All new repressos will be located to minimize the likelihood of floods moving nonindigenous aquatic species into Chiricahua leopard frog, desert pupfish, Gila chub, and/or Gila topminnow habitat by adhering to the following guidelines:

    a. New repressos should be located outside of the current 100-year floodplain when possible (same as TC17);

    b. Repressos shall be constructed so runoff from precipitation captured by each represso is minimal (same as TC18);

    c. The maximum water depth in a represso may not exceed four feet at any spot (same as TC19);

d. The repressos shall be used only when required to water cattle and shall be allowed to dry when no longer needed to water cattle (same as TC20);

e. If repressos do not dry within six months after use ends, they shall be drained. Before draining, check for Chiricahua leopard frogs. If frogs are present, maintain the pond and remove any nonindigenous aquatic species that may be present (same as TC21); (Note: The BLM will be responsible for any required draining of repressos not related to the livestock operation.)

f. Repressos should be located so access to the public, and potential for unauthorized release of nonindigenous species, is minimized (same as TC22);

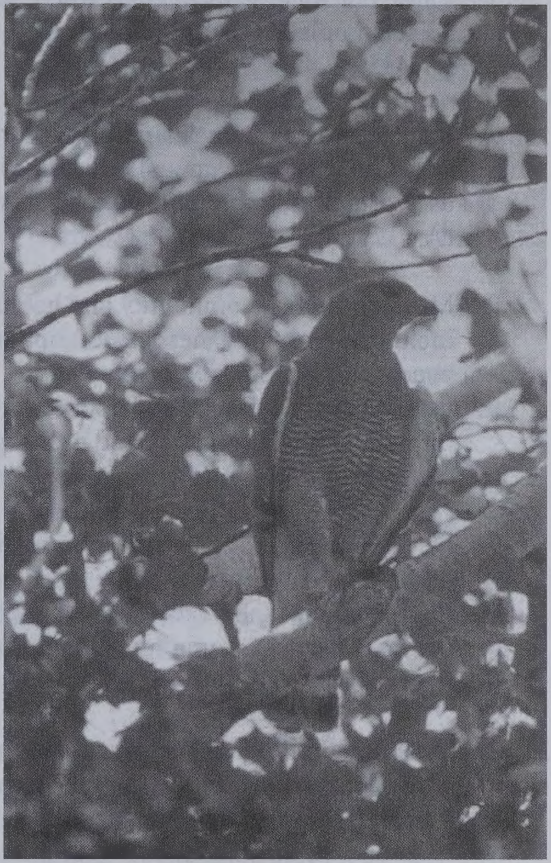
g. Coordinate with the Service on citing of new repressos, consider the location based on an analysis of permanency and likelihood of contributing to spread of disease or nonnatives, or contributing to Chiricahua leopard frog metapopulation dynamics (same as TC23).

2. Implement the following additional measures to protect Gila topminnow and Gila chub and their habitats from grazing impacts:

   a. Limit livestock use in riparian areas of Cienega Creek and Nogales Springs with perennial water to the Narrows crossing lane and watering area (T. 18S, R. 18E, Sec. 3) and areas where BLM, through the biological planning process, determines a need to use livestock grazing as a management tool to meet a riparian or aquatic-related resource objective. (GM33)

   b. Rotate use of crossing lanes and move cattle through them within 21 days. (GM34)

   c. Minimize impacts to Gila topminnow and Gila chub from use of creek crossings and watering areas by livestock through the following (same as TC24);



- When considering which creek crossings to use for livestock, avoid crossings which are known to be occupied by Gila topminnow and/or Gila chub when possible (presently, most crossing are occupied by topminnow);

- Monitor crossings at least once a year to determine if there are problems with erosion, sedimentation, vegetation condition, or any other resource conditions;

- Ensure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly;

   d. Phase out water gaps in areas where adjacent upland waters are developed. (GM35)

   e. Inspect and maintain riparian exclosure fences at least once annually just prior to use of lands adjacent to the exclosures. (AA37)

   f. Monitor the fish community and habitat including crossing lanes, grazed riparian zones, and repressos to document the level of incidental take and to check for introduction of exotic fish and bullfrogs. (AA38)

   g. Develop mitigation plans in coordination with the USFWS for range improvements and vegetation treatments that may harm the topminnow or chub or their habitats. (AA39)

3. Implement the following additional measures to protect the Southwestern willow flycatcher and its habitat from grazing impacts:

   a. Exclude livestock grazing from occupied or unsurveyed, suitable habitat during the Southwestern willow flycatcher-breeding season (April 1-September 1), except for crossing lanes. (GM36)

      - When considering which creek crossings to use for livestock, do not use crossings that are known to be occupied by Southwestern willow flycatcher. If Southwestern willow flycatcher surveys are not done before crossings are used during the flycatcher breeding and nesting period, then do not use crossings that traverse areas identified as suitable flycatcher habitat. Temporary crossings for livestock across Cienega Creek may be used. Locations of temporary crossings will be determined in coordination with the Service and the AGFD; (same as TC25)
      - Ensure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly; (same as TC26)

   b. Do not authorize livestock management activities, including development of range improvements, in the riparian zone of unsurveyed, suitable or occupied willow flycatcher habitat during the willow flycatcher-breeding season. (GM37)

   c. Locate any new livestock management facilities likely to attract and support cowbirds more than five miles from occupied, suitable, or potential flycatcher habitat unless such facilities are crucial to protecting riparian habitat and cowbird trapping is implemented to counteract the effect of the facility. (GM38)

   d. If brown-headed cowbirds are found to be parasitizing the nests of Southwestern willow flycatchers, then monitoring for nest parasitism will occur for an additional year, using established protocols. If nest parasitism is greater than 30% during the two years, then a cowbird trapping program will be initiated following the guidance in the draft Southwestern willow flycatcher recovery plan (USFWS 2002c) and other established protocols (same as TC27).

      - The number and location of traps will be determined based on the distribution of willow flycatcher along the drainage, but including a minimum of two traps;
      - All traps will be checked at least once each day; individual traps will be checked at about the same time each day;
      - Data will be maintained on the brown-headed cowbird trapping program, including:
      - date trapping is initiated and stopped;

  - locations of traps marked on a topographic map;
  - variations from established protocol;
  - number and sex of brown-headed cowbirds and non-target species captured;
  - date of each capture;

- All captured brown-headed cowbirds will be euthanized in a humane manner and dead birds disposed of properly;

- BLM will report to USFWS each year on the survey and trapping program.

e. In the pasture with the Narrows, one of the three following actions will be implemented (same as TC28):

   - Removal of all livestock by March 30;

     OR

   - Exclusion of the Narrows from livestock grazing all year;

     OR

   - In the riparian corridor that is still open to grazing, grass and herbaceous vegetation will have a stubble height of at least six inches when livestock are removed from the pasture. The riparian corridor includes the high terrace with mesquite. Livestock must be removed from the pasture not later than May 1.

4. Implement the following additional measures to protect Chiricahua leopard frogs and desert pupfish and their habitats from grazing impacts:

   Use of creek crossings and watering areas for livestock should minimize impacts to Chiricahua leopard frogs and desert pupfish (same as TC29);

   - When considering which creek crossings to use for livestock, avoid crossings which are known to be occupied by Chiricahua leopard frogs or desert pupfish;

   - If a crossing within occupied leopard frog or pupfish habitat must be used, use it for 14 days or less;

   - Ensure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly;

Rose Tree Allotment (#6043) Management

Summary of RMP Allocation

Permitted use on the Rose Tree allotment is 1104 AUMs of livestock grazing forage on 3,550 acres of the 3,950 acres of public lands on the allotment. (see GM01)

About 400 acres (7%) of the BLM lands on the Rose Tree allotment will be excluded from livestock grazing as vegetation study areas. The exact number of excluded acres may vary depending on the number, size, and location of study exclosures that will be developed to help evaluate the effectiveness of grazing management. The allotment also includes 3,719 acres of State Trust lands and 1,200 acres of private lands, which the livestock operator uses continue to use for grazing.

Rose Tree Allotment Livestock Grazing Management Actions

1. Continue flexible livestock rotation using a selective rest-rotation strategy as described in the general grazing management prescriptions. Within the forage allocation (permitted use), authorized use will be varied annually based on an assessment of range conditions, including forage availability and biological monitoring through the biological planning process. Forage temporarily available above the forage allocation (permitted use) may be apportioned on a non-renewable basis. Any active use below the permitted use, which is recommended

through the biological planning process may be applied for as temporary non-use subject to approval by the authorized officer. The variable annual use levels will be achieved through Terms and Conditions applied to the grazing leases. Changes in permitted use will be based on inventory and monitoring data (same as GM15).

2. Establish a utilization limit of 30-40% of current year's growth on key perennial grass species as described in the general management prescriptions above (same as GM16).

3. Implement a biological planning process on the Rose Tree allotment as described in the general grazing management prescriptions. (same as AA30)

4. Develop a grazing management plan that incorporates flexible stocking rates, the biological planning process, and any other range improvements needed to meet resource objectives. (same as AA31)

5. Establish study exclosures on the approximately 400 acres of public lands not allocated to livestock grazing by constructing perimeter fencing (GM-39). Monitor these non-grazed lands to determine the effects of grazing and rest on habitats. (AA40)

6. Conduct an ecological site inventory to evaluate current vegetation conditions to compare to the upland vegetation objective. (AA41)

   The following management prescriptions will be implemented as terms and conditions that will be attached to the grazing lease.

7. Levels of grazing use and grazing practices will be determined annually through the biological planning process as approved by the authorized officer and described in the Las Cienegas RMP (same as GM21).

8. Adjust livestock grazing rotation and utilization and develop more fencing as needed to achieve watershed cover required in the upland vegetation objective. (GM40)

9. Adjust livestock grazing rotation and utilization and develop more fencing, as needed, to leave enough cover after the summer livestock rotation to meet cover needs for pronghorn fawning as described in the pronghorn habitat objective (Upland Wildlife Habitat Sub-Objective B) and to ensure adequate cover for grassland sparrows as defined in the grassland sparrow sub-objective (Upland Wildlife Habitat Sub-Objective A). (GM41)

Vera Earl Allotment (#6129) Management

Summary of RMP Allocation

Permitted use on the Vera Earl allotment is 324 AUMs of livestock grazing forage on 1,240 acres of the 1,440 acres of public lands on the allotment. (see GM01)

About 200 acres (14%) of the BLM lands on the Vera Earl allotment will be excluded from livestock grazing as vegetation study areas. The exact number of excluded acres may vary depending on the number, size, and location of study exclosures that will be developed to help evaluate the effectiveness of grazing management.

Vera Earl Allotment Livestock Grazing Management Actions

1. Continue flexible livestock rotation using a selective rest-rotation strategy as described in the general grazing management prescriptions. Within the forage allocation (permitted use), authorized use will be varied annually based on an assessment of range conditions, including forage availability and biological monitoring through the biological planning process. Forage temporarily available above the forage allocation (permitted use) may be apportioned on a non-renewable basis. Any active use below the permitted use, which is recommended through the biological planning process may be applied for as temporary non-use subject

to approval by the authorized officer. The variable annual use levels will be achieved through Terms and Conditions applied to the grazing leases. Changes in permitted use will be based on inventory and monitoring data (same as GM15).

2. Establish a utilization limit of 30-40% of current year's growth on key perennial grass species as described in the general grazing management prescriptions (same as GM16).

3. Implement a biological planning process on the Vera Earl allotment as described in the general grazing management prescriptions. (same as AA30)

4. Develop a grazing management plan that incorporates flexible stocking rates, the biological planning process, and any other range improvements needed to meet resource objectives. (same as AA31)

5. Establish study exclosures on the approximately 200 acres of public lands not allocated to livestock grazing by constructing perimeter fencing (GM42). Monitor these non-grazed lands to determine the effects of grazing and rest on habitats. (AA42)

6. Conduct an ecological site inventory to evaluate current vegetation conditions to compare to the upland vegetation objective. (AA43)

   The following management prescriptions will be implemented as terms and conditions that will be attached to the grazing lease.

7. Levels of grazing use and grazing practices will be determined annually through the biological planning process as approved by the authorized officer and described in the Las Cienegas RMP (same as GM21).

8. Adjust livestock grazing rotation and utilization and develop more fencing, as needed, to achieve watershed cover required by the upland vegetation objective. (GM43)

9. Adjust livestock grazing rotation and utilization and develop more fencing, as needed, to leave enough cover after the summer livestock rotation to meet cover needs for pronghorn fawning as described in the pronghorn habitat objective (Upland Wildlife Habitat Sub-Objective B) and to ensure adequate cover for grassland sparrows as defined in the grassland sparrow sub-objective (Upland Wildlife Habitat Sub-Objective A). (GM44)

Empire Mountains Allotment Management

Summary of RMP Allocation

The permitted use on this new allotment will be 360 AUMs of livestock grazing forage on 2,000 acres of the 2,480 acres of public lands in the Empire Mountains. The allotment will not be activated until the prerequisites described in the livestock management actions section below are completed. (see GM01)

If the allotment is not activated within five years of the date of the Record of Decision on this plan, then the BLM will reassess the situation and consider reallocating the forage to watershed and other uses. (see GM02).

About 480 acres of the BLM lands in the Empire Mountains will be excluded from livestock grazing as vegetation study areas. The exact number of excluded acres may vary depending on the number, size, and location of study exclosures that will be developed to help evaluate the effectiveness of grazing management. The grazing allotment could also include about 4,000 acres of private lands leased by the grazing operator for grazing.

Empire Mountains Livestock Grazing Management Actions

Prior to authorization of any active livestock use on the new Empire Mountains allotment, the grazing lessee will be required to submit a proposed Allotment Management Plan developed with full cooperation of the private landowners within the allotment boundary. The plan must include necessary water and pasture development

to provide adequate yearly rest for rangeland health. The plan must also include executed leases for grazing use of private lands and easements for fences, waters, and livestock ingress and egress. An economic analysis will be required showing sources and time frames for funding of the necessary infrastructure. An environmental analysis and biological assessment on the plan will also be required including completion of an ecological site inventory. The completed plan will be reviewed through the biological planning process, other interested public, and approved by the BLM.
The following steps must be completed before the allotment can be activated:

1. Conduct an ecological site inventory to evaluate current vegetation conditions to compare to the upland vegetation objective and to help establish an initial stocking rate. (AA44)

2. Establish flexible livestock rotation using a selective rest-rotation strategy as described in the general grazing management prescriptions. Within the forage allocation (permitted use), authorized use will be varied annually based on an assessment of range conditions, including forage availability and biological monitoring through the biological planning process. Forage temporarily available above the forage allocation (permitted use) may be apportioned on a non-renewable basis. Any active use below the permitted use, which is recommended through the biological planning process may be applied for as temporary non-use subject to approval by the authorized officer. The variable annual use levels will be achieved through Terms and Conditions applied to the grazing leases. Changes in permitted use will be based on inventory and monitoring data (same as GM15).

3. Establish a utilization limit of 30-40% of current year's growth on key perennial grasses as described in the general grazing management prescriptions (same as GM16).

4. Implement a biological planning process on the Empire Mountains allotment as described in the general grazing management prescriptions. (same as AA30)

5. Develop a community-based grazing management plan that incorporates flexible stocking rates and rotation, the biological planning process, and any range improvements needed to meet resource objectives and manage livestock. (AA45)

6. Establish study exclosures on the approximately 400 acres of public land not allocated to livestock grazing (GM-45). Monitor these non-grazed lands to determine the effects of grazing and rest on habitats. (AA46)

7. Lessee must secure necessary executed leases for grazing use of private lands and easements for fences, waters, and livestock ingress and egress. (AA47)

8. Complete necessary economic, environmental analysis and biological assessment. (AA48)

9. Build any needed range improvements, including water and pasture development, and complete the plan with community involvement before stocking any livestock on allotment. (GM46)

DECISION RATIONALE

The alternative selected as the approved Las Cienegas RMP provides the best mix of decisions to protect the physical and biological environment; to protect, preserve and enhance historic, cultural, and natural resources; and that consider social and economic factors. The approved RMP meets the intent of FLPMA, NEPA, and other applicable laws, regulations, and BLM policies. In addition, the approved RMP best meets the requirements of the NCA legislation including responding to the outcomes of the collaborative process, meeting stakeholder and partner needs, and providing for resource protection and sustainability.

Desired Future Condition Objectives

Upland Objective

Ecological Sites

The present plant community on an ecological site can be compared to the vegetation states that can exist on the site. One can compare existing to potential vegetation through a similarity index expressed as the percentage of the desired plant community present on the site. The similarity index to historic climax provides a measurement of change that has occurred and shows how climate and management have affected a site's plant community. For each site, the NRCS develops and maintains the ecological site descriptions that describe historic climax plant communities. BLM will determine the present vegetation condition from ecological site inventories using the NRCS ecological site descriptions in its Range and Pasture Handbook (NRCS 1997).

Upland Vegetation Condition

The upland vegetation structure of the Sonoita Valley is a dynamic mixed shrub savanna where the dominance of desirable native perennial grasses is emphasized. Native trees, shrubs, and succulents are also a part of the natural community. The relative abundance of each species results from the interaction of soils, climate, disturbance regimes, and competition among plant species.

When vigorous, this vegetation provides a ground cover of living plants and organic matter. This ground cover encourages precipitation to infiltrate the soil and reduces evaporation of moisture from the soil surface. The vegetation stabilizes soils and limits erosion to natural levels. The mosaic of diverse plant communities favors the production of high-quality water, wildlife, livestock, fish habitats, recreation opportunities, and a refuge from urban settings.

Watershed Health

Watershed health largely depends on vegetation community composition and vigor that affect hydrological relationships. Soil cover consists of plants, plant litter, gravel, and rock. Infiltration and runoff, soil structure, soil moisture, and aquifer recharge are properly balanced only when cover is sufficient.

Rangeland Health

The goals, objectives, and actions presented in this plan are intended to meet or exceed the standards required in the BLM's *Standards and Guidelines for Rangeland Health in Arizona*. BLM developed these standards and guidelines in consultation with Arizona's Resource Advisory Council and others.

The fundamentals of rangeland health combine the precepts of physical function and biological health with elements of law relating to water quality, plant and animal populations, and communities. These fundamentals give the direction for developing resource objectives and selecting proper management actions to meet these objectives. The *Arizona Standards and Guidelines* meet the requirements and intent of 43 Code of Federal Regulations, Subpart 4180 (Rangeland Health). These standards and guidelines are intended to clearly state BLM's policy and direction for public land users and for those responsible for managing the public lands and accountable for their condition. Attempting to achieve the historic climax plant community on ecological sites should direct management actions toward maintaining or restoring the physical function and biological health of the rangeland ecosystem. Sustaining the ecological health and function of rangelands allows the maintenance, enhancement, or creation of future social and economic options. Actions selected must be realistic and physically and economically achievable.

Riparian Objective

Properly Functioning Riparian Areas

The riparian objective for BLM-managed lands is consistent with Standard 2 of *Arizona Standards and Guidelines for Rangeland Health* (See Desired Conditions Section). Standard 2 requires that riparian-wetland areas be in properly functioning condition. Proper functioning condition of riparian and wetland areas is determined using the methodology described in the BLM's Riparian Area Management Technical Reference 1737-9, Process for Assessing Proper Functioning Condition (BLM 1993 and 1994a). The assessment evaluates presence or absence of the hydrologic, vegetation, and soil erosion/deposition factors that contribute to riparian area function (See Appendix 2 of the PRMP/FEIS for more information on PFC assessments).

The Cienega Creek riparian system is relatively stable, unlike canyon-bound streams with limited floodplain function. The objective of achieving and maintaining potential natural community for 95% of the riparian areas takes into account disturbances from natural events such as floods or fires which may impact portions of the riparian area, returning them temporarily to an earlier successional stage. Recovery of the riparian area to the potential natural community has been observed to occur fairly rapidly.

Aquatic Habitat Objective

Lack of pools is often a limiting factor in degraded riparian systems. Excessive sediment loads, coupled with a poor differential in scour and deposition, may prevent or inhibit pool formation and development (Rosgen, 1996). The development of a diversity of habitats that creates a wide array of physical attributes is expected to provide habitat for all life stages of each of the three fish species. Some locations along the creek have small areas of floodplain and streambank sheet or gully erosion. Sedimentation is likely to be a continual problem until the stream has adjusted in areas that are recovering from past entrenchment. The major sediment source in these areas is from sloughing banks as a new floodplain is established within the steep walled gully (stream adjustment to release itself from confinement due to entrenchment).

The fish with the most specific habitat requirements is the Gila chub. Overall, aquatic habitat diversity and stability are expected to increase if riparian and aquatic parameters listed above are met. Habitat parameters were selected to promote the health of this fish. Since the Gila topminnow and longfin dace also depend on pools and will benefit from the improvement of other parameters, all three fish species are expected to maintain healthy populations.

If the aquatic habitat objective is met, both juvenile and adult life stages of all three species are expected to be well represented in this fish community. In addition, all three segments are expected to maintain an average density exceeding 20 chub per 100 ft2 of deep pool (> 2 ft deep) electrofished. Evidence of three distinct age classes will be interpreted as successful life recruitment into the adult age class. Habitat requirements of the fish have been studied the most thoroughly. But if habitat parameters for fish are met, then other aquatic species are also likely to benefit including two leopard frog species, Mexican garter snake, Sonoran mud turtle, two species of kingfishers, snipe, and several duck species.

Fish and Wildlife Objective

Achieving the upland and riparian vegetation objectives should produce vegetation states similar to the historic climax communities by creating a mosaic of habitat types for wildlife.

Table 12. Vegetation Communities and Associated Wildlife Species, Las Cienegas Resource Management Plan

MLRA	Ecological Site	Brown & Lowe Vegetation Community	*Visual Aspect of the Historic Climax Plant Community*	Associated Wildlife Species
41-3 Southern Arizona Semidesert Grassland	Sandy Loam Upland; Loamy Upland; Swales; Limy Slopes; Volcanic Hills; Volcanic Hills/Limy Slopes; Loamy Upland-Swales; Sandy Loam Upland/Loamy Upland; Loamy Upland/Limy Slopes	143.1 Semidesert Grassland	Open Grassland	Baird's sparrow, grasshopper sparrow, scaled quail, aplomado falcon, pronghorn
	Loamy Hills; Loamy Hills/Limy Slopes; Volcanic Hills/Shallow Upland/Clay Hills	143.1	Grassland- Shrub Dotted	Baird's sparrow, grasshopper sparrow, scaled quail, aplomado falcon, lesser long-nosed bat, javelina, pronghorn
	Limestone Hills; Basalt	143.1	Shrub-Grassland	Mule deer, javelina
	Limestone Hills/Limy Upland	143.1	Shrubland	Gambel's quail, javelina, jaguar
		123.31 Madrean Woodland	Oak Woodland	Turkey, Mearn's quail, jaguar, white-tail deer, mule deer
		Altered	Mesquite invaded Grass	Mule deer, javelina, Swainsons hawk
Riparian Plant Communities	Loamy Bottom (Woodland)	223.231 Mesquite Bosque	Mesquite Woodland	Gray hawk (in assoc. with cottonwood willow), white-tail deer, javelina
	Sandy-Bottom	243.32 Xero-riparian	Savannah	Gambel's quail, Mearn's quail, mule deer, javelina, jaguar
	Loamy Bottom Subirrigated	143.141 Sacaton Grassland	Open Grassland	Botteri's sparrow, Mearn's quail, black-tailed prairie dog, white-tail deer, javelina

Table 12 cross-references the rangeland ecological sites in the desired states to wildlife habitats (Brown 1982).

Cultural Resources Objective

Compliance with the National Historic Preservation Act established BLM policy requires management of the planning area's cultural resources in a manner providing for:

- Collection and assimilation of information about the nature of the cultural resources known and expected to occur within the field area.
- Assessment of cultural resource use potentials.
- Assignment of resource uses.
- Planned steps to protect or realize assigned uses.

- Authorization of appropriate uses.

(See Appendix 2 of the PRMP/FEIS for a more detailed description of Cultural Resource Use Categories.)

Livestock Grazing Management Actions

The livestock grazing management actions seek to maximize livestock management responsiveness to changes in the annual vegetation production. Under the flexible grazing management strategies, actual use levels will be determined annually in response to changes in total forage production, amount of forage available, and results of monitoring the health of the resource. This management is being practiced voluntarily on the Empire-Cienega allotment through the biological planning process and to some degree on the Empirita allotment.

As an example of how the flexible management will be implemented, Tables 2-21, 2-22, 2-23 on pages 2-122 and 2-123 of the RMP/FEIS were developed. These tables compare three different rates of possible annual production (favorable, normal, and unfavorable years) to the corresponding stocking rate that could be implemented as a result of that year's forage production on each of the allotments. The goal is to quickly respond to annual fluctuations in production by altering the actual use and livestock rotation. Actual use levels may be higher or lower than those shown in this example, depending on evaluation of resource conditions and monitoring data through the biological planning process. More livestock exclosures will be established to help monitor vegetation responses (See Tables 2-15 through 2-19 in the PRMP/FEIS).

The actual use levels will vary with changes in vegetation production. Table 13 shows the total vegetation production in favorable, normal, and unfavorable years (based on rainfall) on all lands within each allotment. Also shown is the average amount of forage that livestock could consume on these lands with variable stocking rates. The useable forage is assumed to be 50% of the total vegetation produced multiplied by the 35% utilization rate on lands allocated for livestock grazing. The percentage of useable forage consumed remains fairly constant under this management strategy.

(Note that 50% is subtracted from the total production prior to applying the use limit. This provides for rangeland health by leaving the cover for watershed values).

Alternatives Considered

Four alternatives for management of Las Cienegas National Conservation Area and public lands within the SVAPD, including a no action alternative, were described in the Draft RMP/DEIS released in August 2001. Review of public comments and management direction resulted in only minor changes to the alternatives when the PRMP/FEIS was published in June 2002.

Alternative 1 (No Action) (Current Management)

Alternative 1, the No Action Alternative, described the continuation of current management. Current management has been ongoing under the interim management guidance for the Empire-Cienega Planning Area included in the Phoenix RMP (BLM 1988) and the interim-grazing plan (BLM 1995). The management goal for the area as stated in the interim management guidance is to "preserve, protect, and enhance the property's multiple use values. These values include an extensive riparian area, presence of an endangered species, outstanding small and big game habitat, magnificent open space, and potential for dispersed recreation activities such as hiking, horseback riding, camping, and picnicking." Under current management, desired resource conditions include an emphasis on federally listed threatened and endangered fish and wildlife and significant cultural properties. Land use allocations are limited to continuing the existing livestock grazing leases and continued closure to mineral exploration and development of lands acquired before the enactment of the Federal Land Exchange Facilitation Act of 1988.

Table 13. Comparison of Vegetation Production Under Three Rainfall Regimes and Forage Consumption by Livestock, Las Cienegas Resource Management Plan

	Total Acres Grazed	Total Cows	Total Production[1] Grazed Acres (Million-lbs.)	Production Consumed By Total Cows (Million-lbs.)	% Total Production Consumed	Useable Forage[2] (Million-lbs.)	% Useable Forage Consumed
Favorable[3] Year	109,048	2,110	179.71	20.26	11	31.45	64
Normal Year	109,048	1,295	119.85	12.43	10	20.97	60
Unfavorable Year	109,048	887	78.98	8.52	10	13.82	62

[1] Total vegetation production comes from the NRCS Ecological Site guides for "favorable, normal, and unfavorable" years and is provided in the site guides only for reference areas considered to have an excellent similarity correlation to the "Historic Climax Plant Community" for each ecological site. Production encompasses all forms of vegetation production, including trees and shrubs so cattle never use a certain amount of production. But production still provides a relative index of cover produced. The useable forage is assumed to be 50% of the total forage produced multiplied by a 35% utilization rate on lands allocated for livestock grazing.

[2] Useable Forage = (TOTAL PRODUCTION x 0.5) x 35% Use Limit.
LBS of Forage Consumed = # CYL x 800lbs./month x 12. A 35% use limit with variable stocking maintains herd consuming about 2/3 of the useable forage (not total production) during different years of production to leave a reserve for unexpected changes.

[3] The " favorable, normal, and unfavorable" years mainly reflect rainfall. This variable is used to show that production varies greatly in response to the amount and timing of precipitation and how different livestock stocking rates affect the amount of vegetation cover remaining to achieve the watershed and wildlife objectives in the plan. In a Favorable Year, the assumed average production is 1800 lbs/ac and 0 .25 AUM/ac on the Empire, Rose Tree, and Vera Earl ranches on the basis of NRCS Ecological Site Guides, and 1200 lbs/ac and 0.18 AUM/ac on the Empirita and Empire Mountain grazing units. In a Normal Year, the assumed average production is 1200 lbs/ac and 0.15 AUM/ac on the Empire, Rose Tree, and Vera Earl allotments based on NRCS Ecological Site Guides, and 800 lbs/ac and 0.12 AUM/ac on the Empirita and Empire Mountain grazing units. In an Unfavorable Year, the assumed average production is 800 lbs/ac and 0 .10 AUM/ac on the Empire, Rose Tree, and Vera Earl ranches on the basis of NRCS Ecological Site Guides, and 500 lbs/ac and 0.09 AUM/ac on the Empirita and Empire Mountain grazing units.

Alternative 1 would not have designated utility corridors, ACECs, recreation zones, or an Arizona Trail corridor. As the baseline against which other alternatives are compared, Alternative 1 is required by the NEPA.

The Action Alternatives (Alternatives 2, 3, and 4)

The three action alternatives differed from current management in several ways. Under all three, desired resource conditions included maintaining or achieving goals and objectives for the planning area developed by the SVPP. Management under all three alternatives emphasized the following:

- Conservation of four rare vegetation communities and 18 associated priority species.
- Retention of the scenic values of the landscape.
- Preservation, adaptive restoration, or scientific investigation of significant cultural properties.

The action alternatives proposed differing land use allocations for mining, utility corridors, recreation zones, corridors for the Arizona Trail, and grazing. Each alternative proposed special designations for areas of critical environmental concern (ACECs). Each alternative would implement the Las Cienegas Acquisition Strategy.

Alternative 2 (Approved Plan)

Alternative 2 emphasized ecosystem management and the use of partnerships and collaboration during implementation to achieve desired resource conditions. Biannually, a Biological Planning Team would collaboratively evaluate monitoring data and issues relating to livestock grazing, recreation, and wildlife management for the primary goal of maintaining or achieving desired resource conditions. BLM would designate all public lands within the planning area as an area of critical environmental concern (ACEC) to protect sensitive riparian and wetland habitats. Livestock grazing would continue on public land allotments, but grazing operations would incorporate variable use levels and flexible rotations. BLM would designate two utility corridors and a corridor for the Arizona Trail and would close or restrict the use of some roads to provide a mix of motorized and non-motorized recreation while ensuring that desired resource conditions are met. Both mechanized and motorized vehicles would be restricted to designated routes. This alternative is preferred by participants in the SVPP.

Alternative 3

Alternative 3 proposed the greatest mix of land uses with restrictions to protect sensitive areas. It would designate two ACECs to protect sensitive riparian and wetland habitats. Livestock grazing would continue on public land allotments, but current livestock grazing operations would be modified by reducing livestock numbers to conservative fixed stocking rates and establishing structured pasture rotations rather than variable stocking rates, seasonal use, and flexible rotations. BLM would designate three utility corridors and a corridor for the Arizona Trail. Alternative 3 proposed fewer road closures and restrictions than under Alternatives 2 and 4 with emphasis on a mix of motorized and non-motorized recreation opportunities. Alternative 3 would also limit camping to designated sites on the most acreage.

Alternative 4

Alternative 4 emphasized land use closures and restrictions and limits on development as the approach to achieving desired resource conditions. Alternative 4 is the most restrictive of the alternatives. Public lands would remain closed to mining and would be closed to livestock grazing. All public lands would be designated as an area of critical environmental concern. A single utility corridor would be designated for major utility lines. The Arizona Trail corridor would use the existing road system and require shared use of motorized and non-motorized travel. More roads would be closed or restricted than under any other alternative. Both mechanized and motorized vehicles would be restricted to designated routes. Recreation developments would be limited to the smallest area. More area would be designated as recreation Zone 3–open to dispersed recreation with fewer restrictions–than under any other alternative.

Environmentally Preferred Alternative

Implementing regulations for NEPA 40 CFR Part 1508.2 (B) require an agency to specify the alternative or alternatives that are considered to be environmentally preferable in the process of reaching its decision. The Environmentally Preferred Alternative is the Proposed Plan in the Final EIS (Alternative 2). When taking into consideration both the human (social and economic) and natural environment, this alternative provides the best mix of protecting the physical and biological environment; protecting, preserving and enhancing historic, cultural, and natural resources; and consideration of social and economic factors. The proposed action meets the intents of FLPMA and NEPA. In addition, the proposed action best meets the requirements of the NCA legislation including responding to the outcomes of the collaborative process, meeting stakeholder and partner needs, and providing for resource protection and sustainability.

IMPLEMENTATION

Many land use plan decisions are implemented or become effective upon approval of the RMP. Examples of the types of decisions that become effective upon approval of the RMP include decisions on land health standards and desired future conditions, land use allocation decisions, and all special designations such as ACECs. Management actions that require additional site-specific project planning as funding becomes available will require further environmental analysis. Decisions to implement site-specific projects are subject to administrative review at the time such decisions are made.BLM will continue to involve and collaborate with the public during implementation of this plan. Opportunities to become involved in the plan implementation and monitoring will include participation in the SVPP, Empire Ranch Foundation, Biological Planning Process, and other partnerships.

Adaptive Management

Adaptive management is a formal, systematic, and rigorous approach to learning from the outcomes of management actions, accommodating change and improving management. It involves synthesizing existing knowledge, exploring alternative actions and making explicit forecasts about their outcomes. Management actions and monitoring programs are carefully designed to generate reliable feedback and clarify the reasons underlying outcomes. Actions and objectives are then adjusted based on this feedback and improved understanding. In addition, decisions, actions and outcomes are carefully documented and communicated to others, so that knowledge gained through experience is passed on, rather than being lost when individuals move or leave the organization.

This RMP implements an adaptive management strategy. This adaptive management process is a flexible process that generally involves four phases: planning, implementation, monitoring, and evaluation. As BLM obtains new information, it will evaluate monitoring data and other resource information to periodically refine and update desired conditions and management strategies. This allows for the continual refinement and improvement of management prescriptions and practices.

Administrative Actions

Although BLM's intent and commitment to accomplish administrative actions is generally addressed in RMP/EIS level documents, such activities are neither land use plan level decisions nor implementation level management action decisions. Administrative actions are day-to-day activities conducted by BLM that are often required by FLPMA yet do not require a NEPA analysis or decision by a responsible official to be accomplished. Examples of administrative actions include: mapping, surveying, inventorying, monitoring, collecting information needed such as research and studies, and completing project specific or implementation level plans. Administrative actions are denoted throughout this document with a number beginning with an "AA."

Requirements for Further Environmental Analysis

The Proposed Las Cienegas RMP/FEIS is a programmatic statement describing the impacts of implementing the proposed land use plan decisions and associated management actions described in the planning area.

Land use plan decisions that are implemented upon approval of the RMP do not require any further environmental analysis or documentation. Whenever implementation level plans (e.g., Transportation Plans or Interpretative Plans, etc.) are prepared additional environmental analysis and documentation would be required. Individual management actions or projects requiring additional site-specific project planning as funding becomes available would require further environmental analysis.

Site-specific environmental analyses and documentation (including the use of categorical exclusions and determinations of NEPA adequacy where appropriate) may be prepared for one or more individual projects, in accordance with management objectives and decisions established in the approved land use plan. In addition, BLM will ensure that the environmental review process includes evaluation of all critical elements, including cultural resources and threatened and endangered species, and completes required State Historic Preservation Office (SHPO) and USFWS Section 7 consultations.

Interdisciplinary impact analysis will be based on this and other applicable EISs. If the analysis prepared for site-specific projects finds potential for significant impacts not already described in an existing EIS, another EIS or a supplement to an existing EIS may be warranted.

Upon providing public notice of a decision, supporting environmental documentation will be sent to all affected interests and made available to other publics on request. Decisions to implement site-specific projects are subject to administrative review at the time such decisions are made.

Monitoring & Evaluation

Monitoring and Evaluation of the Las Cienegas RMP allows BLM to track and implement decisions, measure the success of implementation and determine the effectiveness of decisions, and ensure the plan is kept current by conducting comprehensive land use plan evaluations.

Monitoring

Monitoring is an essential component of an adaptive management strategy. Monitoring data is used to assess resource conditions, identify resource conflicts, determine if resource objectives are being met, and periodically refine and update desired conditions and management strategies.

The following monitoring will be established and/or continued under the approved RMP (See Appendix 9 for monitoring protocols) and additional monitoring will be established as needed.

Aquatic Habitat Monitoring

At least 4 - 0.25-mile reaches of Cienega Creek will be monitored every three years to determine habitat trends.

Riparian Monitoring

Riparian condition will be reassessed every five years at key riparian monitoring sites for segments currently in proper functioning condition. Segments that are not in proper functioning condition will be monitored every 2-5 years depending on the type of management change being implemented.

Upland Vegetation Monitoring

Upland vegetation will be monitored at permanent vegetation transects on the Empire-Cienega and Empirita allotments. A proportion of these transects will be monitored annually. In addition, habitat components for pronghorn fawns and grassland sparrows will be monitored annually along transects in key areas.

Water Quantity Monitoring

Stream discharge measurements will be obtained from a continuous recording stream gage on Cienega Creek.

Threatened and Endangered Species Monitoring

In order to document levels of take and determine effectiveness of conservation measures, the following monitoring actions are required terms and conditions in the Biological Opinion for the Las Cienegas RMP:

1. BLM will monitor northern aplomado falcon populations (if they are reestablished) and habitat;

2. BLM will continue to monitor Chiricahua leopard frog populations and habitat in accordance with FWS/AGFD/NMGF (2002) survey protocol;

3. BLM will monitor the desert pupfish and its habitat if the species is reestablished;

4. BLM will continue to monitor the Gila chub and Gila topminnow and their habitats as proposed under the Native Fish Monitoring section;

5. BLM will continue to monitor the lesser long-nosed bat and its habitat;

    a. BLM will develop with USFWS a monitoring program to determine density of flowering agave stalks within core use-areas.

    b. BLM will then implement the monitoring plan.

6. BLM will continue to monitor the Southwestern willow flycatcher populations and habitat;

    a. If flycatchers are detected at any time of year, BLM will contact the USFWS, and determine their breeding status using the following criteria:

        - repeated presence of a non-singing Southwestern willow flycatcher, or a Southwestern willow flycatcher using vocalizations other than the primary song next to an individual exhibiting territorial behavior;

        - observation of a Southwestern willow flycatcher carrying nesting material;

        - observation of Southwestern willow flycatchers copulating;

        - verification of a willow flycatcher nest;

        - observation of a Southwestern willow flycatcher carrying food items; and/or

        - observation of a juvenile Southwestern willow flycatcher.

    b. If breeding status is confirmed or suspected, BLM will continue monitoring efforts by visiting breeding locations at least once during each of the three 10-day periods of June and July or until observation indicates that Southwestern willow flycatcher have stopped breeding efforts. BLM will collect breeding and habitat data and determine if nest parasitism by brown-headed cowbirds is occurring as outlined in the survey protocol (Tibbitts et al. 1994) and submit the completed data forms to AGFD Partners in Flight Program.

7. BLM will prepare an annual report each year which summarizes the implementation of the proposed action and any incidental take that occurred of Aplomado Falcon, Chiricahua Leopard Frog, desert pupfish, Gila chub (if listed), Gila topminnow, lesser long-nosed bat and Southwestern willow flycatcher.

Native Fish Monitoring

At least five aquatic habitats will be monitored annually using one-pass sampling with seines to determine relative abundance and population trends of Gila topminnow and to screen for exotic fishes and bullfrogs. At least three aquatic habitats will be monitored annually using electrofishing and/or traps to determine relative abundance and population trends of Gila chub.

Wildlife Monitoring

Monitoring Avian Productivity and Survivorship (MAPS) Bird Banding Station: A MAPS station was established on the NCA in 2002. MAPS is a nationwide network of bird-banding stations, operated during spring and summer, to collect data on the productivity and survival rates of land bird populations. The operation of a MAPS banding station entails a total of only 6-10 days every year between May and August. The purpose of MAPS station is to provide long-term data on the productivity, survivorship and population sizes of land bird species through constant-effort mist-netting and banding during the breeding season. The major objective of the MAPS program is to contribute to an integrated avian population monitoring system for North American land bird species by providing annual regional indices and estimates for four population and demographic parameters: adult population size, post-fledging productivity, adult survivorship, and recruitment into the adult population Willow Flycatcher Surveys: Annual willow flycatcher surveys will be conducted in suitable habitat for a minimum of 3 years to determine if additional pairs are colonizing the area and if so whether successful nesting is occurring. If breeding pairs are found to be regularly using the area, then monitoring will be continued for the longer term.

Lesser Long-nosed Bat Habitat: In August 2001, BLM established 5 photo plots to monitor yearly fluctuations in agave abundance. These plots will be sampled annually. In addition, a plot-based methodology to assess influences of herbivory on agave being tested by the University of Arizona Range Department will be evaluated for use on the planning area.

Pronghorn and Grassland Sparrow Habitat: Habitat components for pronghorn fawns and grassland sparrows will be monitored annually along transects in key areas. A pronghorn habitat study initiated by the AGFD in the spring of 2002 should help refine future monitoring needs and appropriate methodologies.

Aquatic Herptiles: Wetland ponds in the floodplain of Cienega Creek will be monitored annually for presence of native frogs and bullfrogs and control program for bullfrogs continued as necessary. BLM is contracting in 2002 with the University of Arizona to assist in inventory of Cienega Creek for aquatic herptiles and development of a long-term monitoring program.

Visitor Use and Impacts Monitoring

In Fall 2001, BLM contracted with the University of Arizona to inventory for and establish a visitor use and impacts monitoring program for Las Cienegas NCA. This work will be carried out in phases over three years (described below), and will be integrated with the implementation of this plan.

Phase I – Assessing Visitor Impact Conditions. This assessment will consist of mapping all existing visitor impact areas (campsite locations, drainage areas, existing gates, fences, trailheads, etc.). In addition, all visitor impact areas will be inventoried using a modified version of the Cole Campsite inventory methodology. This methodology evaluates each of the impact areas, examining vegetation cover, firewood availability, vegetation density, composition, total area impacted, barren core area, litter and duff, social trails, mutilations etc. The data collected for each of the locations will be used to derive an impact condition ranking as well as to determine viable, quantitatively evaluated ecological indicators that can be used for establishing a long term monitoring program.

Phase II – Visitor Use/Social Inventory & Monitoring. This inventory/monitoring phase will be undertaken to capture baseline information on both spatial and temporal patterns of dispersed visitation of the conservation area. In addition, monitoring will be established to capture current patterns of recreational vehicular use in the NCA. The inventory process will involve undertaking a stratified sample of known trail head/entrance locations to the conservation area. Both overnight and day use activities will be assessed. At all major trailhead/entrances, a self-administered automated card/diary system will be established to capture spatial/temporal patterns of use in those designated areas. Trail counters will be used to quantify volume of use, anticipating that not all those visiting the area will take the time to use the diary. Day use cards will also be used at these locations to capture similar information from those only intending on spending the day in the conservation area.

Phase II – Using Simulation to test alternative Management Plans and Derive Capacity Measures. This phase of the project will construct a simulation system using data collected during the first two phases to simulate and evaluate management alternatives considered in the conservation area's management plan. The simulation system will allow managers to identify issues such as points of overcrowding, bottlenecks in circulation, parking capacity at trailheads, conflicts between different user groups and associated environmental impacts, distribution of use with proposed road closures, impacts of proposed commercial or new visitor activities before committing resources to expensive construction projects. More importantly, the simulation environment will provide managers with the capability to explore visitor capacities and their associated impacts. This phase will assist in determining where increased use will be expected, how much and aid in establishing a monitoring plan for both visitor use and associated impacts.

Biological Planning

The biological planning process will be continued as described in the livestock grazing management actions section above. Depending on the issues for that session, monitoring data collected for biological planning will include:

Precipitation
Rangeland ecological site (range) condition
Riparian and aquatic condition
Vegetation trends
Vegetation utilization
Soil cover
Wildlife populations and habitats
Livestock pasture use records
Livestock pasture recovery (new production)
Recreation post-use reports
Informal evaluations of monitoring data will occur twice a year when the Biological Planning Team meets to discuss livestock and recreation management activities.

Long-Term Ecological Monitoring Program

A threat-based ecological monitoring program will be developed (see Appendix 9) to expand ongoing monitoring efforts. The ecological monitoring program will be fully developed as a separate document but will be an integral part of BLM's Las Cienegas RMP. The monitoring program will help ensure that Las Cienegas NCA resources are protected over both the short- and long-term under a flexible, multi-use management plan. Development of partnerships will be an important factor in implementing the long-term monitoring program.

Information Needs

The actions in this section are proposals to increase the knowledge base for Las Cienegas NCA and SVAPD. In some instances, BLM must have the information from these inventories or studies before changing management. In other instances such information is desirable for making more informed land management decisions. These studies and inventories will supplement the monitoring proposals in tracking the progress of proposed actions in meeting resource objectives.

Inventories and Assessments

1. Assess the road system to determine what design changes are needed to halt excessive erosion or other resource impacts.

2. Inventory all natural and developed water sources within the planning area to determine their use and reliability as wildlife water sources and to determine if more waters are needed.

Vegetation Studies

1. In partnership with other agencies and entities, continue to complete ecological site inventories of all lands in the planning area. In particular, inventories are needed of the current vegetation conditions in the Rose Tree and Vera Earl allotments and the Empire Mountains.

2. Continue to work on developing and refining riparian ecological site descriptions (including sites for interior marshland

communities) for Las Cienegas riparian areas.

3. Place surveyed cross-sections in key riparian segments (geo-referenced).

Fish and Wildlife Studies

As funding and priorities allow, support research in priority species and habitats including the following:

1. Collect information on roost locations and the timing and level of use of flowering agave by lesser-long-nosed bats in the Sonoita Valley and the relationships of grazing and prescribed fire to survival and reproduction of agave populations.
2. Study pronghorn and mule deer including population viability, movements, and use patterns to determine population and habitat relationships to proposed land uses and ongoing development patterns.
3. Study the effect of prescribed fire on Baird's and Botteri's sparrows
4. Study the effect of prescribed fires in uplands on water quality and on the fish community in Cienega Creek.

Cultural Resource Studies

1. Conduct a Class II cultural resources inventory of the planning area as funding allows.
2. Conduct ethnographic and historic studies for the planning area, including ethnoecology and an oral history collection as funding allows.

Plan Evaluations

Plan evaluations determine whether the land use plan decisions and NEPA analysis are still valid and whether the plan is being implemented. At a minimum, BLM will conduct formal plan evaluations every five years. Results of plan evaluations will be included in a report to the BLM Field Manager. The following questions are generally addressed in plan evaluations:

1. Are actions outlined in the plan being implemented?
2. Is BLM achieving or likely to achieve resource goals, standards, and objectives?
3. Are the allocations, constraints, or mitigation measures effective in achieving objectives?
4. Do decisions continue to remain valid over time?
5. Has there been significant change in the related plans of Indian tribes, State or local governments, or other federal agencies?
6. Are new data or analyses significant to the planning decisions or the validity of the NEPA analysis?
7. Can unmet needs or new opportunities best be met through a plan amendment or revision or will current management practices be sufficient?
8. Is new information needed to resolve a new or existing issue?

PLAN MODIFICATION

The Las Cienegas RMP will be kept current through approved plan modification procedures including plan maintenance, plan amendments, or plan revision. The appropriate plan modification will be dictated by land monitoring and comprehensive land use plan evaluation.

Plan Maintenance

Plan maintenance (see 43 CFR 1610.5-4) is the process of further refining or documenting a previously approved decision in an RMP. Maintenance must not expand the scope of resource uses or restrictions or change the terms, conditions, and decisions of the approved plan.

Plan maintenance needs to be a continual process so that the plan and its supporting records reflect the current status of decision implementation and knowledge of resource conditions.

Plan Amendments

Plan amendments (see 43 CFR 1610.5-5) are prepared to change one of more of the terms, conditions, or decisions of an approved land use plan. These decisions may include those relating to desired resource outcomes; measures to achieve desired outcomes, including resource restrictions; or land tenure decisions. A plan may need to be amended in order to:

- Consider a new proposal or action that does not conform to the plan.
- Implement new or revised policy that changes land use plan decisions
- Respond to new, intensified, or changed uses on public lands
- Consider new information from resource assessments, monitoring, or scientific studies that change land use plan decisions.

The process for conducting plan amendments is basically the same as the process for preparing the land use plan originally. The primary difference is that, depending on the level of complexity, a plan amendment may be completed through the EA process, rather than through the EIS process.

Plan Revision

Plan revisions (see 43 CFR 1610.5-6) involve preparation of a new RMP to replace an existing one. RMP revisions are necessary if monitoring and evaluation findings, new data, new or revised policy, or changes in circumstances indicate that decisions for an entire plan or a major portion of a plan no longer serve as a useful guide for resource management. Plan revisions are prepared using the same procedures and documentation as for new plans.

APPENDICES

APPENDIX 1

106TH CONGRESS
2D SESSION

H. R. 2941

AN ACT

To establish the Las Cienegas National Conservation Area in the State of Arizona.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. DEFINITIONS.

For the purposes of this Act, the following definitions apply:

(1) CONSERVATION AREA.—The term "Conservation Area" means the Las Cienegas National Conservation Area established by section 4(a).

(2) ACQUISITION PLANNING DISTRICT.—The term "Acquisition Planning District" means the Sonoita Valley Acquisition Planning District established by section 2(a).

(3) MANAGEMENT PLAN.—The term "management plan" means the management plan for the Conservation Area.

(4) PUBLIC LANDS.—The term "public lands" has the meaning given the term in section 103(e) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1702(e)), except that such term shall not include interest in lands not owned by the United States.

(5) SECRETARY.—The term "Secretary" means the Secretary of the Interior.

SEC. 2. ESTABLISHMENT OF THE SONOITA VALLEY ACQUISITION PLANNING DISTRICT.

(a) IN GENERAL.—In order to provide for future acquisitions of important conservation land within the Sonoita Valley region of the State of Arizona, there is hereby established the Sonoita Valley Acquisition Planning District.

(b) AREAS INCLUDED.—The Acquisition Planning District shall consist of approximately 142,800 acres of land in the Arizona counties of Pima and Santa Cruz, including the Conservation Area, as generally depicted on the map entitled "Sonoita Valley Acquisition Planning District and Las Cienegas National Conservation Area" and dated October 2, 2000.

(c) MAP AND LEGAL DESCRIPTION.—As soon as practicable after the date of the enactment of this Act, the Secretary shall submit to Congress a map and legal description of the Acquisition Planning District. In case of a conflict between the map referred to in subsection (b) and the map and legal description submitted by the Secretary, the map referred to in subsection (b) shall control. The map and legal description shall have the same force and effect as if included in this Act, except that the Secretary may correct clerical and typographical errors in such map and legal description. Copies of the map and legal description shall be on file and available for public inspection in the Office of the Director of the Bureau of Land Management, and in the appropriate office of the Bureau of Land Management in Arizona.

SEC. 3. PURPOSES OF THE ACQUISITION PLANNING DISTRICT.

(a) IN GENERAL.—The Secretary shall negotiate with land owners for the acquisition of lands and interest in lands suitable for Conservation Area expansion that meet the purposes described in section 4(a). The Secretary shall only acquire property under this Act pursuant to section 7.

(b) FEDERAL LANDS.—The Secretary, through the Bureau of Land Management, shall administer the public lands within the Acquisition Planning District pursuant to this Act and the applicable provisions of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.), subject to valid existing rights, and in accordance with the management plan. Such public lands shall become part of the Conservation Area when they become contiguous with the Conservation Area.

(c) FISH AND WILDLIFE.—Nothing in this Act shall be construed as affecting the jurisdiction or responsibilities of the State of Arizona with respect to fish and wildlife within the Acquisition Planning District.

(d) PROTECTION OF STATE AND PRIVATE LANDS AND INTERESTS.—Nothing in this Act shall be construed as affecting any property rights or management authority with regard to any lands or interest in lands held by the State of Arizona, any political subdivision of the State of

Arizona, or any private property rights within the boundaries of the Acquisition Planning District.

(e) PUBLIC LANDS.—Nothing in this Act shall be construed as in any way diminishing the Secretary's or the Bureau of Land Management's authorities, rights, or responsibilities for managing the public lands within the Acquisition Planning District.

(f) COORDINATED MANAGEMENT.—The Secretary shall coordinate the management of the public lands within the Acquisition Planning District with that of surrounding county, State, and private lands consistent with the provisions of subsection (d).

SEC. 4. ESTABLISHMENT OF THE LAS CIENEGAS NATIONAL CONSERVATION AREA.

(a) IN GENERAL.—In order to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the unique and nationally important aquatic, wildlife, vegetative, archaeological, paleontological, scientific, cave, cultural, historical, recreational, educational, scenic, rangeland, and riparian resources and values of the public lands described in subsection (b) while allowing livestock grazing and recreation to continue in appropriate areas, there is hereby established the Las Cienegas National Conservation Area in the State of Arizona.

(b) AREAS INCLUDED.—The Conservation Area shall consist of approximately 42,000 acres of public lands in the Arizona counties of Pima and Santa Cruz, as generally depicted on the map entitled "Sonoita Valley Acquisition Planning District and Las Cienegas National Conservation Area" and dated October 2, 2000.

(c) MAPS AND LEGAL DESCRIPTION.—As soon as practicable after the date of the enactment of this Act, the Secretary shall submit to Congress a map and legal description of the Conservation Area. In case of a conflict between the map referred to in subsection (b) and the map and legal description submitted by the Secretary, the map referred to in subsection (b) shall control. The map and legal description shall have the same force and effect as if included in this Act, except that the Secretary may correct clerical and typographical errors in such map and legal description. Copies of the map and legal description shall be on file and available for public inspection in the Office of the Director of the Bureau of Land Management, and in the appropriate office of the Bureau of Land Management in Arizona.

(d) FOREST LANDS.—Any lands included in the Coronado National Forest that are located within the boundaries of the Conservation Area shall be considered to be a part of the Conservation Area. The Secretary of

Agriculture shall revise the boundaries of the Coronado National Forest to reflect the exclusion of such lands from the Coronado National Forest.

SEC. 5. MANAGEMENT OF THE LAS CIENEGAS NATIONAL CONSERVATION AREA.

(a) IN GENERAL.—The Secretary shall manage the Conservation Area in a manner that conserves, protects, and enhances its resources and values, including the resources and values specified in section 4(a), pursuant to the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) and other applicable law, including this Act.

(b) USES.—The Secretary shall allow only such uses of the Conservation Area as the Secretary finds will further the purposes for which the Conservation Area is established as set forth in section 4(a).

(c) GRAZING.—The Secretary of the Interior shall permit grazing subject to all applicable laws, regulations, and Executive Orders consistent with the purposes of this Act.

(d) MOTORIZED VEHICLES.—Except where needed for administrative purposes or to respond to an emergency, use of motorized vehicles on public lands in the Conservation Area shall be allowed only—

(1) before the effective date of a management plan prepared pursuant to section 6, on roads and trails designated for use of motorized vehicles in the management plan that applies on the date of the enactment of this Act; and

(2) after the effective date of a management plan prepared pursuant to section 6, on roads and trails designated for use of motor vehicles in that management plan.

(e) MILITARY AIRSPACE.—Prior to the date of the enactment of this Act the Federal Aviation Administration approved restricted military airspace (Areas 2303A and 2303B) which covers portions of the Conservation Area. Designation of the Conservation Area shall not impact or impose any altitude, flight, or other airspace restrictions on current or future military operations or missions. Should the military require additional or modified airspace in the future, the Congress does not intend for the designation of the Conservation Area to impede the military from petitioning the Federal Aviation Administration to change or expand existing restricted military airspace.

(f) ACCESS TO STATE AND PRIVATE LANDS.—Nothing in this Act shall affect valid existing rights-of-way within the Conservation Area. The Secretary shall provide reasonable access to nonfederally owned lands or interest in lands within the boundaries of the Conservation Area.

(g) HUNTING.—Hunting shall be allowed within the Conservation Area in accordance with applicable laws and regulations of the United States and the State of Arizona, except that the Secretary, after consultation with the Arizona State wildlife management agency, may issue regulations designating zones where and establishing periods when no hunting shall be permitted for reasons of public safety, administration, or public use and enjoyment.

(h) PREVENTATIVE MEASURES.—Nothing in this Act shall preclude such measures as the Secretary determines necessary to prevent devastating fire or infestation of insects or disease within the Conservation Area.

(i) NO BUFFER ZONES.—The establishment of the Conservation Area shall not lead to the creation of protective perimeters or buffer zones around the Conservation Area. The fact that there may be activities or uses on lands outside the Conservation Area that would not be permitted in the Conservation Area shall not preclude such activities or uses on such lands up to the boundary of the Conservation Area consistent with other applicable laws.

(j) WITHDRAWALS.—Subject to valid existing rights all Federal lands within the Conservation Area and all lands and interest therein which are hereafter acquired by the United States are hereby withdrawn from all forms of entry, appropriation, or disposal under the public land laws and from location, entry, and patent under the mining laws, and from operation of the mineral leasing and geothermal leasing laws and all amendments thereto.

SEC. 6. MANAGEMENT PLAN.

(a) PLAN REQUIRED.—Not later than 2 years after the date of the enactment of this Act, the Secretary, through the Bureau of Land Management, shall develop and begin to implement a comprehensive management plan for the long-term management of the public lands within the Conservation Area in order to fulfill the purposes for which it is established, as set forth in section 4(a). Consistent with the provisions of this Act, the management plan shall be developed—

(1) in consultation with appropriate departments of the State of Arizona, including wildlife and land management agencies, with full public participation;

(2) from the draft Empire-Cienega Ecosystem Management Plan/EIS, dated October 2000, as it applies to Federal lands or lands with conservation easements; and

(3) in accordance with the resource goals and objectives developed through the Sonoita Valley Planning Partnership process as incorporated in the draft Empire-Cienega Ecosystem Management Plan/EIS, dated October 2000, giving full consideration to the management alternative preferred by the Sonoita Valley Planning Partnership, as it applies to Federal lands or lands with conservation easements.

(b) CONTENTS.—The management plan shall include—

(1) provisions designed to ensure the protection of the resources and values described in section 4(a);

(2) an implementation plan for a continuing program of interpretation and public education about the resources and values of the Conservation Area;

(3) a proposal for minimal administrative and public facilities to be developed or improved at a level compatible with achieving the resource objectives for the Conservation Area and with the other proposed management activities to accommodate visitors to the Conservation Area;

(4) cultural resources management strategies for the Conservation Area, prepared in consultation with appropriate departments of the State of Ari-

zona, with emphasis on the preservation of the resources of the Conservation Area and the interpretive, educational, and long-term scientific uses of these resources, giving priority to the enforcement of the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa et seq.) and the National Historic Preservation Act (16 U.S.C. 470 et seq.) within the Conservation Area;

(5) wildlife management strategies for the Conservation Area, prepared in consultation with appropriate departments of the State of Arizona and using previous studies of the Conservation Area;

(6) production livestock grazing management strategies, prepared in consultation with appropriate departments of the State of Arizona;

(7) provisions designed to ensure the protection of environmentally sustainable livestock use on appropriate lands within the Conservation Area;

(8) recreation management strategies, including motorized and nonmotorized dispersed recreation opportunities for the Conservation Area, prepared in consultation with appropriate departments of the State of Arizona;

(9) cave resources management strategies prepared in compliance with the goals and objectives of

the Federal Cave Resources Protection Act of 1988 (16 U.S.C. 4301 et seq.); and

(10) provisions designed to ensure that if a road or trail located on public lands within the Conservation Area, or any portion of such a road or trail, is removed, consideration shall be given to providing similar alternative access to the portion of the Conservation Area serviced by such removed road or trail.

(c) COOPERATIVE AGREEMENTS.—In order to better implement the management plan, the Secretary may enter into cooperative agreements with appropriate Federal, State, and local agencies pursuant to section 307(b) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1737(b)).

(d) RESEARCH ACTIVITIES.—In order to assist in the development and implementation of the management plan, the Secretary may authorize appropriate research, including research concerning the environmental, biological, hydrological, cultural, agricultural, recreational, and other characteristics, resources, and values of the Conservation Area, pursuant to section 307(a) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1737(a)).

SEC. 7. LAND ACQUISITION.

(a) IN GENERAL.—

(1) PRIORITY TO CONSERVATION EASEMENTS.—In acquiring lands or interest in lands under this section, the Secretary shall give priority to such acquisitions in the form of conservation easements.

(2) PRIVATE LANDS.—The Secretary is authorized to acquire privately held lands or interest in lands within the boundaries of the Acquisition Planning District only from a willing seller through donation, exchange, or purchase.

(3) COUNTY LANDS.—The Secretary is authorized to acquire county lands or interest in lands within the boundaries of the Acquisition Planning District only with the consent of the county through donation, exchange, or purchase.

(4) STATE LANDS.—

(A) IN GENERAL.—The Secretary is authorized to acquire lands or interest in lands owned by the State of Arizona located within the boundaries of the Acquisition Planning District only with the consent of the State and in accordance with State law, by donation, exchange, or purchase.

(B) CONSIDERATION.—As consideration for the acquisitions by the United States of lands or interest in lands under this paragraph, the Secretary shall pay fair market value for such lands or shall convey to the State of Arizona all or some interest in Federal lands (including buildings and other improvements on such lands or other Federal property other than real property) or any other asset of equal value within the State of Arizona.

(C) TRANSFER OF JURISDICTION.—All Federal agencies are authorized to transfer jurisdiction of Federal lands or interest in lands (including buildings and other improvements on such lands or other Federal property other than real property) or any other asset within the State of Arizona to the Bureau of Land Management for the purpose of acquiring lands or interest in lands as provided for in this paragraph.

(b) MANAGEMENT OF ACQUIRED LANDS.—Lands acquired under this section shall, upon acquisition, become part of the Conservation Area and shall be administered as part of the Conservation Area. These lands shall be managed in accordance with this Act, other applicable laws, and the management plan.

SEC. 8. REPORTS TO CONGRESS.

(a) PROTECTION OF CERTAIN LANDS.—Not later than 2 years after the date of the enactment of this Act, the Secretary shall submit to Congress a report describing the most effective measures to protect the lands north of the Acquisition Planning District within the Rincon Valley, Colossal Cave area, and Agua Verde Creek corridor north of Interstate 10 to provide an ecological link to Saguaro National Park and the Rincon Mountains and contribute to local government conservation priorities.

(b) IMPLEMENTATION OF THIS ACT.—Not later than 5 years after the date of the enactment of this Act, and at least at the end of every 10-year period thereafter, the Secretary shall submit to Congress a report describing the implementation of this Act, the condition of the resources and values of the Conservation Area, and the progress of the Secretary in achieving the purposes for which the Conservation Area is established as set forth in section 4(a).

Passed the House of Representatives October 5, 2000.

Attest:

Clerk.

APPENDIX 2

The Sonoita Valley Planning Partnership: A New Approach to Community Participation in Public Land Management Planning.

Karen Simms U.S. Bureau of Land Management, Tucson Field Office, 12661 E. Broadway, Tucson, Arizona 85748, (520)258-7210,(520)258-7238 fax, karen_simms@blm.gov

Note: This paper was originally presented at the *Creative Cooperation in Resource Management Conference*, Tucson, Arizona, May 2000. It has been slightly updated to reflect current information on the SVPP as of date of publication of the approved Las Cienegas RMP.

Abstract

The Sonoita Valley is a unique, scenic area of rolling desert grasslands and woodlands in a high desert basin in southeastern Arizona. Located along a scenic highway within an hour of the rapidly growing Tucson metropolitan area, the Sonoita Valley includes the public lands of the Las Cienegas National Conservation Area and Sonoita Valley Acquisition Planning District (formerly the Empire-Cienega Resource Conservation Area) administered by the Bureau of Land Management and intermixed state and private lands surrounded by National Forest Lands administered by the Coronado National Forest. In 1995, the Bureau of Land Management's Tucson Field Office decided to take a new, collaborative approach to complete long-term land use planning needed to guide management of the 45,000 acres of public land within the Empire-Cienega Resource Conservation Area. This approach lead to the formation of the Sonoita Valley Planning Partnership (SVPP), an informal, voluntary association of public and private participants (federal, state, and local agencies, organized groups and individuals) who share a common interest in the future of public land resources in the Sonoita Valley. The SVPP was conceived as a way for the community (private and public) to come together to achieve community oriented resolutions to local and national issues affecting these public land resources. The SVPP met monthly between 1995 and 2001 and now meets quarterly. The SVPP is open to any interested participants. Facilitated discussions focused on issues relating to recreation, livestock grazing, mining, wildlife, vegetation, water quality and quantity, and cultural resources. Out of these discussions, participants agreed on the primary goals of maintenance of healthy riparian areas and native grassland systems and associated water, vegetation, wildlife and cultural resources as these in turn support a broad range of recreation opportunities; livestock grazing and other public land uses. In addressing these issues, the SVPP developed visions, goals and desired future conditions (objectives) and developed alternative management strategies for resolving issues and achieving objectives which are designed to be incorporated into various planning efforts currently underway in the Valley. BLM's Tucson Field Office, as a participant in the planning partnership, has incorporated the goals and objectives as the foundation for the Las Cienegas Resource Management Plan.

Introduction

The Sonoita Valley Planning Partnership (SVPP) is a voluntary association of federal, state, and local agencies; organized groups; and people who share a common interest in the future of public land resources in the Sonoita Valley. Participants come from a variety of communities in southern Arizona, including Sonoita, Elgin, Patagonia, Huachuca City, Sierra Vista, Nogales, Tucson, and Phoenix.

Participants also represent organized groups, including conservation organizations; grazing and mining interests; and hiking, bird-dog, mountain biking, and off-highway vehicle clubs. Agency representation has come from BLM, the Nogales and Sierra Vista ranger districts of Coronado National Forest, Natural Resources Conservation Service, U.S. Geological Survey, Arizona Game and Fish Department, Arizona State Land Department, Arizona Department of Water Resources, Pima County Parks and Recreation and Planning/Flood Control, and Santa Cruz County. The partnership is open to all; anyone can participate and can join at any time.

The Sonoita Valley Planning Partnership was conceived as a way for the community (private, public, government, local, non-local) to come together to resolve local and national issues affecting public lands in the Sonoita Valley. The partnership has increased awareness, communication, and understanding, as well as trust and support among its members and has helped us look at the valley as a whole and determine what we want and need in the future.

Setting

A unique, scenic area of open, rolling grasslands in a high desert basin, the Sonoita Valley lies in the uppermost watersheds of three streams in southeast Arizona: the Babocomari River, Cienega Creek, and Sonoita Creek. To the north spread the grasslands and woodlands of Las Cienegas National Conservation Area managed by the Bureau of Land Management. To the south, east, and west are the woodlands and forests managed by two units of Coronado National Forest.

At the crossroads of two scenic highways within an hour of the rapidly growing Tucson metropolitan area, the Sonoita Valley is surrounded by public lands. These lands have outstanding dispersed recreation opportunities, a variety of traditional uses, and significant natural resources, including several endangered species. The valley still retains wide-open spaces, rural lifestyles and values, and a great variety of plant communities and wildlife. But, at the same time, is it also vulnerable to the impacts of rapid growth and the intensifying conflicts at the urban-rural interface.

Ecosystem Planning and the Collaborative Approach

The Council on Environmental Quality Regulations for implementing the National Environmental Policy Act (NEPA) direct that to the fullest extent possible federal agencies shall encourage and facilitate public involvement in decisions that affect the quality of the human environment. Traditionally, BLM and other agencies have involved the public in planning at the initial scoping stage and have then "disappeared" until ready to ask for comments on a draft plan. This process resulted in many people thinking that their comments were ignored and to a lack of trust in the agencies and outcomes of the process.

In recent years, there has been a major shift toward an ecosystem management approach in land use planning. Under the ecosystem management approach, planning processes are more open to the public, and the public is involved early in the process. Interested parties are encouraged to help establish goals and identify ways to achieve them. A comparison of the traditional and ecosystem approaches to land use planning is provided in Table 1.

Table 1
Comparison of Traditional Planning Approach and Ecosystem Planning Approach

Traditional Approach	**Ecosystem Approach**
• Public involvement solicited at selected stages of plan development.	• Public involved throughout process.
• Emphasis on consultation.	• Emphasis on collaboration.
• Process based on issues, which may lead to increased polarization.	• Process based on developing desired conditions for area (goals and objectives) leading to increased consensus building.
• Planning boundary based on agency jurisdictional boundary.	• Planning boundary based on ecosystem resources and processes and blurring jurisdictional boundaries.
• Traditional management focusing on analysis of conditions at one point-in-time leading to more rigid planning documents.	• Emphasis placed on adaptive management.
• Public involvement generally ends with completion of planning document.	• Continued public involvement in plan implementation and monitoring.

The interagency ecosystem management task force in its 1995 report, *The Ecosystem Approach: Healthy Ecosystems and Sustainable Economies,* recommended eight steps in *The Ecosystem Approach* to guide agencies in implementing and participating in ecosystem efforts and which are complementary to NEPA:

1. Define the areas of concern or interest
2. Involve stakeholders
3. Develop a shared vision of the ecosystem's desired future conditions
4. Characterize the historical ecosystem and the present environmental, economic, and social conditions and trends
5. Establish ecosystem goals
6. Develop and implement an action for achieving the goals
7. Monitor conditions and evaluate results
8. Adapt management according to new information

In 1995, The Tucson Field Office, Bureau of Land Management decided to take a new collaborative approach to planning for the Empire-Cienega Resource Conservation Area with full public participation guided by these principles of Ecosystem Management. This approach resulted in the formation of the Sonoita Valley Planning Partnership.

For nearly six years, beginning in 1995, the SVPP held monthly meetings that were open to all interested participants. Facilitated discussions focused on issues relating to recreation, livestock grazing, mining, wildlife, vegetation, water quality and quantity, and cultural resources. Out of these discussions, participants agreed on the primary goals of maintenance of healthy riparian areas and native grassland systems, and associated water, vegetation, wildlife, and cultural resources, as these in turn support a broad range of recreation opportunities, livestock grazing, and other public land uses. In addressing these issues, the SVPP developed a shared vision, goals, and desired future conditions and specific objectives for the Sonoita Valley, and reached consensus on a preferred series of alternative management strategies for resolving issues and achieving objectives. More recently, the SVPP has focused on development of a long-term monitoring program, partnership opportunities to ensure resources are available for plan implementation and monitoring and involvement with complementary land use planning and conservation efforts.

Initially, SVPP participants were interested in the possibility of developing a broad ecosystem plan for the Sonoita Valley area. Early in the process, it became obvious that this goal was unattainable, at least in the short-term, and the focus was shifted to developing desired conditions, goals and objectives for the Sonoita Valley which could be applied to the entire area and could be incorporated in different planning efforts as they were undertaken. So far, two planning efforts, this one for the Las Cienegas Resource Management Plan and one for the Northeastern Santa Cruz County Comprehensive Plan drafted by the Sonoita Crossroads Community Forum, have incorporated the desired conditions.

Sonoita Valley Planning Partnership Outcomes

To date the Sonoita Valley Planning Partnership has accomplished the following:

- Raised a variety of issues concerning public lands within the Sonoita Valley.
- Developed Desired Future Conditions for the Sonoita Valley including a vision statement; broad goals for vegetation, wildlife, water, watershed, cultural resources, recreation, open space, traditional uses, and stewardship of resources; and specific, measurable objectives for upland and riparian vegetation, watershed, wildlife, cultural resources, and recreation opportunities which can be applied to all lands within the Sonoita Valley.
- Been instrumental in the designation of Las Cienegas Resource Management Plan and Sonoita Valley Acquisition Planning District
- Developed alternative management strategies to solve issues and achieve desired conditions that focus on public lands, which are now within Las Cienegas National Conservation Area and Sonoita Valley Acquisition Planning District but are also relevant and applicable to surrounding and intermixed lands.
- Reached consensus on a series of alternative management strategies that they would like to see BLM implement in the Las Cienegas Resource Management Plan

Successes and Lessons Learned

The SVPP's success so far is reflected by several phenomena. The Partnership has maintained a high level of active participation, and new participants have continued to join. Communication has increased among participants on a variety of levels, and agencies have increased their interest and involvement in management. BLM's Tucson Field Office, as a participant in the planning partnership, has incorporated the SVPP's goals and objectives as the foundation for the Las Cienegas Resource Management Plan.

The Sonoita Crossroads Community Forum, which is dealing with many land use issues that complement those being dealt with by the Partnership, has also incorporated the products of the SVPP process in its draft Northeastern Santa Cruz County Comprehensive Plan.

When a National Conservation Area designation was proposed for the Empire-Cienega RCA and neighboring state lands in 1999, the legislation acknowledged the SVPP's efforts by stating that the management plan for the NCA must be built from the products of the SVPP and must be consistent with the desired conditions for the area developed through the SVPP process. Many SVPP participants subsequently joined the ranks of active supporters of the NCA, and became crucial contributors to the successful passage of the legislation.

Nevertheless, each SVPP participant may measure success differently. The results of a participant survey and interviews (pending) will help us better define the success of the process for everyone involved. However success is defined, we have learned the following valuable lessons through the SVPP process.

- An open process is important. When everyone is invited to participate, then everyone's concerns can be heard, and the group gets the value of a variety of perspectives. Detractors can simply be invited to come and see for themselves.

- A neutral facilitator is valuable for starting the collaborative process, particularly if a public agency plays a key role in this process. Such a facilitator may become less needed as trust is built and facilitation can be shared among participants. A neutral facilitator may also be useful for discussions or decisions on topics in which all participants have a stake, so that everyone has an equal chance to participate.

- At the outset, everyone should become acquainted or reacquainted in a nonconfrontational, recreational (i.e., fun) atmosphere. Such a partnership is all about community, and participants should first connect as members of a community before tackling tough issues together. Sharing a meal is a good way to help people connect (potlucks are great for this).

- Participants should begin the process by developing a shared vision and goals, or some product that will define a common ground. Depending on the situation and issues that are being worked on, this may be a relatively quick process, or it may take some time to get there.

- A successful partnership must establish an effective way for participants to communicate with each other, and must maintain communication throughout the process. Poor communication can lead to misunderstandings or mistrust. The SVPP's main communication tool has been monthly (and now quarterly) minutes mailed to all participants.

- Community participatory approaches tend to be long and involved, and require a strong, continued commitment to keep them going. It is important at the outset to have known funding sources (whether agency funding, grants, or donations). Costs for meeting rooms, mailings, workshops, and refreshments can add up. Also important is a coordinator who can dedicate a certain amount of time to the process.

- There is always a place for education. Participants informally educate each other whenever they share views. For certain topics, technical specialists can ensure that everyone is familiar with terminology and methods. Because not everyone is likely to agree on who the technical specialists are, participants should decide as a group which people to bring in, as well as when to bring them in, and for what topics.

APPENDIX 3

Errata Sheet for the Proposed Las Cienegas RMP/FEIS

The following corrections are made to the Proposed Las Cienegas RMP/FEIS.

1. Chapter 2: Page 2-21. Table 2-5, Comparison of Alternatives – Management Actions. The first row in this table was missing and should have been "Administrative sites" with the following wording for all four alternatives: "Four administrative sites are designated (Empire Ranch Headquarters, Hummel Ranch buildings, Cienega Ranch buildings, and High Lonesome buildings)." In the PRMP/FEIS, see page 2-82 for more-detailed narrative of this action and Map 2-21 on page 2-83 for more information.

2. Chapter 2: Page 2-24. Table 2-5, Comparison of Alternatives – Management Actions. Under Cultural Resource Management, "Class II surveys" should be changed to "Class III surveys". These would occur, dependent on funding, on 40,000 acres under Alternatives 1, 2, and 3 and on a project-by-project basis under Alternative 4. Under Alternative 4, Class II surveys would occur as funded. This correction will make the text in the table consistent with the narratives on pages 2-81, 2-112, and 2-153.

3. Chapter 2: Part A -Land Use Plan Proposals. Alternative 2, Page 2-53, Table 2-9. In the second line under Minerals Management section, the action to prohibit removal of mineral materials for personal use should have been should be changed to the following (The "yes" in the Alternative columns should not have been changed to "no").

   ~~Require free use permits for~~ Prohibit removal of mineral materials for personal use. Yes Yes[1] Yes

4. Chapter 2: Page 2-98, In the shaded paragraph in the right column, the first clause In non-wildland urban interface areas, should be deleted.

5. Chapter 2: Part B – Management Actions. Watershed Management Actions – Common to Alternatives 2, 3 and 4. Page 2-102. The bullet between numbered bullets 9 and 11 should have been numbered "10".

6. Chapter 2: Part B – Management Actions. Fish and Wildlife Management Actions – Common to Alternatives 2, 3 and 4. Page 2-102. The first three bullets should have been numbered "1", "2" and "3". The next three indented bullets should have been labeled "a", "b", and "c".

7. Chapter 2: Part B – Management Actions. Fish and Wildlife Management Actions – Common to Alternatives 2, 3 and 4. Page 2-106. The first three bullets in the first column on this page should have been labeled "d", "e", and "f". The 4th bullet in the first column on this page preceding "Reestablish, extend the distribution within…" should have been numbered "7". The last two bullets on this page in the second column should have been numbered "8" and "9".

8. Chapter 2: Part B – Management Actions. Fish and Wildlife Management Actions – Common to Alternatives 2, 3 and 4. Page 2-107. The first bullet on the first column of this page should have

been numbered “10”. The last bullet in the first column of this page should have been labeled “f”. The first two bullets in the second column of this page should have been labeled “g” and “h”. The sixth bullet in the second column on this page preceding “Require that dogs be leashed…” should have been labeled “l”. The last bullet in the second column on this page should have been numbered “11”.

9. Chapter 2: Part B – Management Actions. Cultural Resource Management Actions – Common to Alternatives 2, 3 and 4. Page 2-110. Under Empire Ranch Headquarters, 2b, The second sentence should read: “The accessible, hardened trail would connect the Empire Ranch Headquarters buildings, landscapes, structures, and features and provide wayside exhibits, signs, and observation points interpreting natural and cultural resources”.

10. Chapter 2: Part B – Management Actions. Cultural Resource Management Actions – Common to Alternatives 2, 3 and 4. Page 2-111. The first 4 bullets in the first column on this page should have been numbered “4”, “5”, “6”, and “7”. The fifth indented bullet in the first column should have been labeled “a”. The first three indented bullets in the second column should have been labeled “b”, “c”, and “d”. The fourth, fifth, and sixth bullets in the second column should have been numbered “8”, “9”, and “10”. After the heading “Cultural Properties Outside the Headquarters Area”, the last two bullets in column 2 on this page should have been numbered “1” and “2”.

11. Chapter 2: Part B – Management Actions. Access and Transportation Management Actions – Common to Alternatives 2, 3 and 4. Page 2-114. The first bullet in the first column on this page should have been numbered “5”.

12. Chapter 2: Part B – Management Actions. Recreation Management Actions – Common to Alternatives 2, 3 and 4. Page 2-114. The first bullet in the second column on this page should have been numbered “1”.

13. Chapter 2: Part B – Management Actions. Recreation Management Actions – Common to Alternatives 2, 3 and 4. Page 2-115. The last bullet in the second column on this page should have been labeled “a”.

14. Chapter 2: Part B – Management Actions. Recreation Management Actions - Common to Alternatives 2, 3, and 4: Management of Dispersed Recreation. Page 2-115. The last sentence of the last paragraph on this page is deleted: ~~Motorized use on primary access roads 900, 901, 902 require all vehicles to be currently licensed, insured, and registered.~~ A new sentence is added: Operators of motorized vehicles on public lands must obey current state motor vehicle regulations.

15. Chapter 2: Part B – Management Actions. Recreation Management Actions – Common to Alternatives 2, 3 and 4. Page 2-116. The first bullet in the first column on this page should have been labeled “b”. The first and second bullets in the second column on this page should have been labeled “c” and “d”.

16. Chapter 2: Part B – Management Actions. Recreation Management Actions – Common to Alternatives 2, 3 and 4. Page 2-117. The first six bullets in the first column on this page should have been labeled “d”, “e”, “f”, “g”, “h” and “i”. The bullet preceding “Interpretive Program” in the first column should have been numbered “5”.

17. Chapter 2: Part B – Management Actions. Recreation Management Actions – Common to Alternatives 2, 3 and 4. Page 2-118. The bullet preceding "Maintenance Program" in the first column on this page should have been numbered "6". The bullet preceding "Administrative Use of Mineral Materials" in the second column on this page should have been numbered "1".

18. Chapter 2: Part B – Management Actions. Mineral Resources Management Actions – Common to Alternatives 2, 3 and 4. Page 2-121. The three bullets in the first column on this page should have been numbered "2", "3", and "4".

19. Chapter 2: Part B – Management Actions. Livestock Grazing Management Actions – Alternative 2. Page 2-122. The second bullet in the second column on this page should have been labeled "3".

20. Chapter 2: Part B – Management Actions. Livestock Grazing Management Actions – Alternative 2. Page 2-127. The last bullet in the first column on this page should have been labeled "a". The first six bullets in the second column on this page should have been labeled "b", "c", "d", "e", "f", and "g".

21. Chapter 2: Part B – Management Actions. Livestock Grazing Management Actions – Alternative 2. Page 2-128. The first three bullets in the first column on this page should have been labeled "a", "b", and "c".

22. Chapter 2: Part B – Management Actions. Livestock Grazing Management Actions – Alternative 2. Page 2-134. The last six bullets in the first column on this page should have been numbered "3", "4", "5", "6", "7", and "8".

23. Appendix 2: ACEC Management. Page A2-25. The management prescriptions for the Appleton-Whittell ACEC, which was designated under the Phoenix RMP (1988), were inadvertently left out. The following management prescriptions should be brought forward from the Phoenix RMP to Appendix 2:

    The Appleton-Whittell ACEC is the public land portion of the Appleton-Whittell Biological Research Sanctuary (Research Ranch) managed by National Audubon Society. It encompasses 3,141 acres of BLM-administered lands. The ACEC is part of a unique laboratory for studying the effects of non-grazing on a desert grassland. The management objective is to cooperate in the research objectives of the Research Ranch. Planned actions include:

    - Designate an ACEC
    - Limit motorized vehicles to designated roads and trails
    - Prohibit land use actions except as authorized by Research Ranch
    - Do not open to mineral location, leasing, or sales
    - Implement 1986 BLM/National Audubon Society MOU
    - Prohibit surface occupancy for oil/gas lease development

24. Appendix 2: ACEC Management. Page A2-28. #11 – The correct wording for this management prescription is "Limit crossings of Cienega Creek for group activities to dry crossings and designated crossings identified in Figure 2-2 (Alternative 2)…"

25. Appendix 2: ACEC Management. Page A2-28. #14 – The correct wording for this management prescription is “Include sensitive riparian habitats within the ACEC as rights-of-way avoidance areas. Access routes for maintenance of existing and future utility lines will not cross perennial reaches of Cienega Creek except at designated crossings.

26. Appendix 2: Integrated Vegetation Treatment Program. Page A2-62. Under Chemical Treatments, 2nd set of bullets, 2nd bullet, “nonmarket vegetation” should be “non-target vegetation”.

APPENDIX 4

Standard Land Use Plan (LUP) Decision Numbering Convention

Standard Resource Categories:

ADMINISTRATIVE ACTIONS	AA
ADMINSTRATIVE MANAGEMENT (ADMINISTRATIVE SITES, AGREEMENTS ETC.)	AM
CULTURAL RESOURCE MANAGEMENT	CL
FIRE MANAGEMENT	FM
GRAZING MANAGEMENT	GM
HAZARDOUS MATERIALS MANAGEMENT	HM
LANDS/REALTY	LR
MINERALS	MI
PALEONTOLOGICAL RESOURCES	PL
RECREATION & OFF-HIGHWAY VEHICLES	RR
RIPARIAN	RP
SOIL, WATER, AIR (WATERSHED)	WS
SPECIAL MANAGEMENT AREAS	SM
SPECIAL STATUS SPECIES	TE
TERM AND CONDITION FROM A BIOLOGICAL OPINION	TC
TRANSPORTATION/ACCESS	TA
VEGETATION MANAGEMENT & FOREST AND WOODLAND MANAGEMENT	VM
VISUAL RESOURCES MANAGEMENT	VR
WILD AND SCENIC RIVERS	WR

WILDERNESS	WD
WILD AND FREE ROAMING HORSE AND BURROS	HB
WILDLIFE/FISHERIES	WF

APPENDIX 5

Las Cienegas RMP Biological Opinion

United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 FAX: (602) 242-2513

In Reply Refer To:
AESO/SE
02-21-02-F-162
02-21-90-F-196
02-21-90-I-150
02-21-91-I-170
02-21-93-F-430
02-21-95-F-177
02-21-95-I-304
02-21-98-F-430
02-21-96-F-160

October 4, 2002

Memorandum

To: Field Manager, Bureau of Land Management, Tucson, Arizona

From: Field Supervisor

Subject: Las Cienegas NCA Resource Management Plan Biological Opinion

Thank you for your memorandum requesting formal consultation with the U.S. Fish and Wildlife Service (Service) following section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request for formal consultation was dated April 19, 2002, and received by us on April 22, 2002. At issue are impacts that may result from the proposed Las Cienegas National Conservation Area Resource Management Plan (RMP)[File No. 6840(068)] in Pima and Santa Cruz counties, Arizona. You requested formal consultation on the endangered southwestern willow flycatcher (*Empidonax traillii extimus*), endangered Gila topminnow (*Poeciliopsis o. occidentalis*), endangered Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*), endangered desert pupfish (*Cyprinodon m. macularius*), endangered Canelo Hills ladies'-tresses *(Spiranthes delitescens*), and the endangered lesser long-nosed bat *(Leptonycteris curasoae yerbabuenae*). You also requested a conference on the Chiricahua leopard frog (*Rana chiricahuensis*) and the Gila chub (*Gila intermedia*). Only the Gila chub has proposed critical habitat within the planning area, and no other species has designated critical habitat in the area.

In your memorandum, you requested our concurrence that the proposed action was not likely to adversely affect the endangered Aplomado falcon (*Falco femoralis*) and the endangered jaguar *(Panthera onca*). You determined the proposed action would not affect the endangered cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*). Discussions between our staffs determined that the pygmy-owl and aplomado falcon should undergo formal consultation. Your letter of July 10, 2002, requested formal consultation for these two species. We concur with the determination for the jaguar, and our rationale is given in Appendix A.

This biological opinion and conference opinion is based on information provided in the April 2002 biological assessment, the August 2001 draft resource management plan and environmental impact statement, numerous telephone conversations, field investigations, and other sources of information. References cited in this biological and conference opinion are not a complete bibliography of all references available on the species of concern, the proposed activities and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Because there have been several section 7 consultations completed on actions in the area and the RMP includes all actions proposed to be taken over the next 20 years, the previous consultations are incorporated here by reference. In addition, all reasonable and prudent measures and terms and conditions still outstanding are incorporated here by reference.

The Service appreciates the Bureau's efforts to identify and minimize effects to listed species on the Las Cienegas National Conservation Area. For further information please contact Doug Duncan (520) 670-4860 or Sherry Barrett (520) 670-4617. Please refer to the consultation number, 2-21-02-F-162, in future correspondence concerning this project.

/s/ Steven L. Spangle

Enclosure

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)

Director, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ
John Kennedy, Arizona Game and Fish Department, Phoenix, AZ

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Summary of the USFWS Biological Opinion on Las Cienegas Resource Management Plan

02-21-02-F-162

BIOLOGICAL AND CONFERENCE OPINION SUMMARY
Effects of the proposed Las Cienegas National Conservation Area
Resource Management Plan in Pima and Santa Cruz Counties, Arizona

Date of opinion: October 4, 2002

Project: Effects of the proposed Las Cienegas National Conservation Area Resource Management Plan in Pima and Santa Cruz Counties, Arizona

Location: Pima and Santa Cruz Counties, Arizona

Listed species affected: endangered southwestern willow flycatcher (*Empidonax traillii extimus*), endangered Gila topminnow (*Poeciliopsis o. occidentalis*), endangered Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*), endangered desert pupfish (*Cyprinodon m. macularius*), endangered Canelo Hills ladies'-tresses *(Spiranthes delitescens*), endangered northern aplomado falcon (*Falco femoralis septentrionalis*), endangered lesser long-nosed bat *(Leptonycteris curasoae yerbabuenae*), endangered cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), threatened Chiricahua leopard frog (*Rana chiricahuensis*), and the proposed endangered Gila chub (*Gila intermedia*) with proposed critical habitat.

Biological and conference opinion: No Jeopardy and no destruction or adverse modification of proposed critical habitat.

Incidental take statement:

Anticipated take: *Exceeding this level may require reinitiation of formal consultation.*

The Service anticipates incidental take may occur for the Gila topminnow, Chiricahua leopard frog, southwestern willow flycatcher, and lesser long-nosed bat. The Service also anticipates that take may occur for the desert pupfish and aplomado falcon, should they be reestablished as proposed under this plan. Take is anticipated for the Gila chub, should it become listed.

Conservation recommendations: *Implementation of conservation recommendations is discretionary.*

Multiple conservation recommendations to further the conservation and recovery of the species and implement the appropriate recovery plans for each species.

Biological Opinion on the Las Cienegas Resource Management Plan

The following are the excerpted Conclusions; Incidental Take Statements; Reasonable and Prudent Measures; Terms and Conditions; and Conservation Recommendations for Species included in the Biological Opinion.

APLOMADO FALCON *(Falco femoralis septentrionalis)*

Conclusion

After reviewing the current status of northern aplomado falcon, the environmental baseline for the action area, the effects of the proposed Las Cienegas NCA RMP and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the endangered northern aplomado falcon. No critical habitat has been designated, thus, none would be affected. We base these conclusions on the following:

1. Northern aplomado falcons do not presently occur in Arizona;
2. The proposed action affects a small portion of the species' historic range;
3. All proposed actions that may affect the northern aplomado falcon have conservation actions included which should minimize effects to the species;
4. If aplomado falcon are reestablished in the action area, the proposed action should be mostly beneficial to the conservation and recovery of the species;
5. The BLM proposes actions identified in the recovery plan that will help conserve and recover the species; and
6. The ecological condition of the area should be maintained and improved during the 20-year life of the RMP.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significant impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the Act if such taking meets the terms and conditions of this Incidental Take Statement.

The Service anticipates that the proposed will result in incidental take of northern aplomado falcons if the falcon is reestablished, as proposed in this plan. Incidental take of the northern aplomado falcon will be difficult to detect for the following reasons: dead animals are difficult to find and cause of death may be difficult to determine. However, take of northern aplomado falcon may occur from livestock grazing and human visitation affects to floral resources. We anticipate that the following take could occur as a result of the proposed action:

1. Not more than 2 northern aplomado falcons during the life of the RMP due to harm resulting from impacts of human visitation and grazing activities on upland vegetation.

2. Not more than 1 nest of northern aplomado falcons during the life of the RMP due to harm resulting from disturbance by grazing activities.

Effect of Take
In this biological opinion, the Service finds the anticipated level of take is not likely to jeopardize the continued existence of the endangered aplomado falcon.

Reasonable and Prudent Measures and Terms and Conditions
The following reasonable and prudent measures are necessary and appropriate to minimize take of the aplomado falcon. To be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and monitoring requirements. These terms and conditions are non-discretionary. These reasonable and prudent measures and terms and conditions are only in effect following reestablishment of aplomado falcons into the project area.

1. The BLM shall continue to monitor the northern aplomado falcon (if they are reestablished) and its habitat to document levels of take and determine effectiveness of conservation measures:

    1.1. The BLM shall continue to monitor northern aplomado falcon populations (if they are reestablished) and habitat;

    1.2. An annual report will be done which summarizes the implementation of the proposed action and any incidental take that occurred. We are especially interested in an analysis of the effectiveness of the conservation measures and terms and conditions.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- We recommend that the BLM investigate and monitor the invasion of Lehmann lovegrass in the planning area and assist other agencies in developing methods for controlling this nonindigenous grass (USFWS 1990).

- We recommend that the BLM implement the northern aplomado falcon recovery plan, as appropriate.

- If aplomado falcons are reestablished and they nest in the area, consider temporary closures to human access around nest sites during the breeding season.

- If aplomado falcons are reestablished and they nest in the area, consider temporary closures to livestock grazing around nest sites during the breeding season, or use different pastures.

For the Service to be kept informed of actions reducing or avoiding adverse effects or benefiting listed species or their habitat, the Service requests notification of the implementation of any conservation recommendations.

CACTUS FERRUGINOUS PYGMY-OWL (*Glaucidium brasilianum cactorum*)

Conclusion

After reviewing the current status of cactus ferruginous pygmy-owl, the environmental baseline for the action area, the effects of the proposed Las Cienegas NCA RMP and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the proposed endangered cactus ferruginous pygmy-owl. No critical habitat is currently designated, thus, none would be affected. We base these conclusions on the following:

1. Pygmy-owls are rare in the action area;
2. The proposed action affects a small portion of the species' range;
3. All proposed actions that may affect the cactus ferruginous pygmy-owl have conservation actions included which should minimize effects to the species; and
4. The ecological condition of the area should be maintained and improved during the 20-year life of the RMP.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significant impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the Act if such taking meets the terms and conditions of this Incidental Take Statement.

Amount or Extent of Take Anticipated

We do not anticipate the proposed action will incidentally take any cactus ferruginous pygmy-owls.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- We recommend that the BLM work with the Service and Arizona Game and Fish Department and other appropriate parties to implement the cactus ferruginous pygmy-owl recovery plan;

- We recommend that the BLM survey areas of potential or suitable habitat, using the habitat evaluation protocol; and

- We recommend that the BLM survey for pygmy-owls using the large area search protocol.

CANELO HILLS LADIES-TRESSES (*Spiranthes delitescens*)

Conclusion

After reviewing the current status of Canelo Hills ladies-tresses, the environmental baseline for the action area, the effects of the proposed Las Cienegas NCA RMP and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the Canelo Hills ladies-tresses. No critical habitat has been designated, thus, none would be affected. We base these conclusions on the following:

1. Canelo Hills ladies-tresses do not occur in the action area;
2. The proposed action should not affect the species;
3. All proposed actions that could affect the Canelo Hills ladies-tresses if it were to occur have conservation actions included which should minimize effects to the species and may actually benefit the orchid and its habitat; and
4. The ecological condition of the area should be maintained and improved during the 20-year life of the RMP.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significant impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the Act if such taking meets the terms and conditions of this Incidental Take Statement.

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of federally listed endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- We recommend that the BLM provide assistance to the Service in developing a recovery plan for the Canelo Hills ladies-tresses;
- We recommend that the BLM fund additional surveys for the Canelo Hills ladies-tresses on BLM lands, and support research on the ecology of the species; and
- We recommend that the BLM work with all interested parties in the Cienega Creek watershed to insure that groundwater use does not exceed annual recharge.

For the Service to be kept informed of actions reducing or avoiding adverse effects or benefiting listed species or their habitat, the Service requests notification of the implementation of any conservation recommendations.

CHIRICAHUA LEOPARD FROG (*Rana chiricahuensis*)

Conclusion

After reviewing the current status of Chiricahua leopard frog, the environmental baseline for the action area, the effects of the proposed Las Cienegas NCA RMP and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the threatened Chiricahua leopard frog. No critical habitat has been designated, thus, none would be affected. We base these conclusions on the following:

1. The population of Chiricahua leopard frogs in the area is sparsely distributed;
2. The Chiricahua leopard frog occurs over a large area of eastern Arizona, western New Mexico and portions of northwestern Mexico. The proposed action affects a small portion of the species' range;
3. All proposed actions that may lead to take of Chiricahua leopard frogs have conservation actions included which should minimize effects to the species; and
4. The ecological condition of the area should be maintained and improved during the 20-year life of the RMP.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significant impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the Act if such taking meets the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued to any applicants, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity covered by this incidental take statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require any applicants to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)]. We anticipate that the following take could occur as a result of the proposed action:

1. Mortality, injury, pursuit, capture, collection, trapping, or harassment of up to 5 adult or metamorph Chiricahua leopard frogs during each control action for bullfrogs;

2. Mortality and injury of up to 4 adult or metamorph frogs and one egg mass annually from the use and maintenance of road and trail crossings in occupied habitat, including contamination from vehicles;

3. Harassment, pursuit, capture, or collection of up to 3 adult or metamorph frogs and one egg mass annually from general recreation use of the area, and use of the Agricultural Fields group site;

4. Mortality, injury, or harassment of up to 5 adult or metamorph Chiricahua leopard frogs and 5 egg masses annually during livestock management actions associated with exclosures, creek crossing and watering areas, and at Cinco Ponds;

5. Mortality of up to 20 adult or metamorph Chiricahua leopard frogs from the introduction or increase of nonindigenous species, especially bullfrogs, associated with the repressos and recreation and other human access;

6. Mortality, injury, or harassment of up to 1 adult or metamorph Chiricahua leopard frog annually during fence maintenance in occupied habitat;

7. Mortality, injury, or harassment of up to 5 adult or metamorph Chiricahua leopard frog annually during construction of a utility line in the utility corridor that crosses the Narrows; and

8. Mortality of Chiricahua leopard frogs at sites outside of the action area, due to dispersal of chytrid fungus by users.

Effect of Take
In this biological opinion, the Service finds the anticipated level of take is not likely to jeopardize the continued existence of the threatened Chiricahua leopard frog.

Reasonable and Prudent Measures and Terms and Conditions
The following reasonable and prudent measures are necessary and appropriate to minimize take of the Chiricahua leopard frog. To be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. The BLM shall continue to monitor the Chiricahua leopard frog and its habitat to document levels of take and determine effectiveness of conservation measures:
    - 1.1. The BLM shall continue to monitor Chiricahua leopard frog populations and habitat in accordance with FWS/AGFD/NMGF (2002) survey protocol;
    - 1.2. An annual report will be done which summarizes the implementation of the proposed action and any incidental take that occurred. We are especially interested in an analysis of the effectiveness of the conservation measures and terms and conditions.
2. Measures shall be implemented to reduce the impacts of the proposed wildlife management actions, livestock grazing, recreation, and utility corridors:
    - 2.1. During control operations, insure that operators can identify bullfrogs and leopard frogs;
    - 2.2. If traps or other methods that do not discriminate between frog species are used during bullfrog control, they will be checked at least twice a day, for as long as the traps or other gear is deployed;
    - 2.3. Reduce the speed limit to 10mph at the EC901 crossings at Empire Gulch and Cienega Creek, and at the EC910D crossing at the Narrows and post the speed limit at each crossing;
    - 2.4. To minimize impacts from recreation and as part of the proposed public education program, include information on the presence of listed species in the area, their status and importance, and prohibitions. The educational venue can take any form, but the first one with this message must be completed within one year of the date of this biological opinion;
    - 2.5. To minimize the potential for recreationists spreading disease, use the Maternity Well or Airstrip sites before the Agricultural Fields Group Site. If water is present in Cienega Creek near the Agricultural Fields Group Site when it is used, limit the groups access to Cienega Creek;
    - 2.5. Use of creek crossings and watering areas for livestock should minimize impacts to Chiricahua leopard frogs;
        - A. When considering which creek crossings to use for livestock, avoid crossings which are known to be occupied by Chiricahua leopard frogs;
        - B. If a crossing within occupied habitat must be used, use it for 14 days or less, and not the 21 days specified in the RMP;

C. Insure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly;

2.6. Check the fences of all exclosures that have occupied Chiricahua leopard frog habitat at least once when the adjacent pasture is being used. If there is a problem with the fence, and livestock are in that pasture, repair the fence within one week of the fence problem being discovered. If cattle are not in the adjacent pasture, repair the fence before livestock are returned to the pasture;

2.7. All new repressos must be located to minimize the likelihood of floods moving exotic fish and bullfrogs into Chiricahua leopard frog habitat;

A. Repressos shall be located outside of the current 100-year floodplain when possible;

B. Repressos shall be constructed so runoff from precipitation captured by each represso is minimal;

C. The maximum water depth in a represso may not exceed four feet at any spot;

D. The repressos shall be used only when required to water cattle and shall be allowed to dry when no longer needed to water cattle;

E. If repressos do not dry within six months after use ends, they shall be drained. Before draining, check for Chiricahua leopard frogs. If frogs are present, maintain the pond and remove any nonindigenous aquatic species that may be present;

F. Repressos shall be located so access to the public, and potential for unauthorized release of nonindigenous species, is minimized;

G. Coordinate with the Service on citing of new repressos, consider the location based on an analysis of permanency and likelihood of contributing to spread of disease or nonnatives, or contributing to Chiricahua leopard frog metapopulation dynamics.

2.8 All BLM personnel working in aquatic habitats will use the protocol described in FWS/AGFD/NMGF (2002) to reduce the spread of chytrid fungus;

2.9 To minimize the loss of egg masses from livestock grazing at Cinco Ponds, BLM shall build a partial exclosure fence.

3. Personnel education programs and well-defined operational procedures shall be implemented:

3.1 All personnel performing maintenance at any creek crossing will be informed of the potential presence of Chiricahua leopard frogs, their status, and the need to perform their duties to avoid impacts to the frog and its habitat;

3.2 All personnel performing fence maintenance at any creek crossing will be informed of the potential presence of Chiricahua leopard frogs, their status, and the need to perform their duties to avoid impacts to the frog and its habitat;

3.3 All personnel installing utility lines at the Narrows will be informed of the potential presence of Chiricahua leopard frogs, their status, and the need to perform their duties to avoid impacts to the frog and its habitat.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- We recommend that the BLM consider providing information and expertise to any recovery team or plan for the Chiricahua leopard frog

- We recommend that the BLM work with the Service and Arizona Game and Fish Department to reestablish the Chiricahua leopard frog to suitable habitats.

- We recommend that the BLM work with the Service and Arizona Game and Fish Department to begin an aggressive program to ensure that nonindigenous aquatic organisms are not introduced to the action area, and if they are, to support actions to remove them.

- We recommend that the BLM build bridges across creek crossings with water. Bridges can reduce long-term habitat degradation, mortality, and disease transmission.

For the Service to be kept informed of actions reducing or avoiding adverse effects or benefiting listed species or their habitat, the Service requests notification of the implementation of any conservation recommendations.

DESERT PUPFISH (*Cyprinodon m. macularius)*

Conclusion

After reviewing the current status of desert pupfish, the environmental baseline for the action area, the effects of the proposed Las Cienegas NCA RMP and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the proposed endangered. Critical habitat has been designated outside of the action area, thus, none would be affected. We base these conclusions on the following:

1. The desert pupfish does occur in the action area, but it is on nearby private land and of questionable genetic lineage;

2. The proposed action affects a small portion of the species' range;

3. If desert pupfish are reestablished in the action area, the proposed action should be mostly beneficial to the conservation and recovery of the species;

4. All proposed actions that could affect the desert pupfish, if it were to occur, have conservation actions included which should minimize effects to the species;

5. The BLM proposes actions identified in the recovery plan that will help conserve and recover the species; and

6. The ecological condition of the area should be maintained and improved during the 20-year life of the RMP.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significant impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the Act if such taking meets the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued to any applicants, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity covered by this incidental take statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require any applicants to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

The Service anticipates that the proposed action will result in incidental take of desert pupfish because reestablishment of the pupfish is part of the proposed action. Incidental take of the desert pupfish is likely to occur if the pupfish is reestablished and will be difficult to detect for the following reasons: dead fish are difficult to find, cause of death may be difficult to determine, and losses may be masked by seasonal fluctuations in numbers or other causes. However, take of desert pupfish may occur from livestock grazing, recreation, and wildlife management actions. We anticipate that the following take could occur as a result of the proposed action:

1. Mortality, injury, pursuit, capture, collection, trapping, or harassment of up to 100 desert pupfish during each control action for nonindigenous aquatic species;

2. Mortality and injury of up to 10 desert pupfish annually from the use and maintenance of road and trail crossings in occupied habitat, including contamination from vehicles;

3. Harassment of up to 10 desert pupfish annually from general recreation use of the area, and use of the Agricultural Fields group site;

4. Mortality, injury, or harassment of up to 25 desert pupfish annually during livestock management actions associated with exclosures, creek crossing and watering areas, and at Cinco Ponds or other reestablishment areas;

5. Mortality of up to 500 desert pupfish from the introduction or increase of nonindigenous species, associated with the repressos and recreation and other human access;

6. Mortality, injury, or harassment of up to 5 desert pupfish annually during fence maintenance in occupied habitat; and

7. Mortality, injury, or harassment of up to 5 desert pupfish annually during construction of a utility line in the utility corridor that crosses the Narrows.

Effect of Take
In this biological opinion, the Service finds the anticipated level of take is not likely to jeopardize the continued existence of the endangered desert pupfish.

Reasonable and Prudent Measures and Terms and Conditions
The following reasonable and prudent measures are necessary and appropriate to minimize take of the desert pupfish. To be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and monitoring requirements. These terms and conditions are non-discretionary. These reasonable and prudent measures and terms and conditions are only in effect following reestablishment of desert pupfish into the project area.

1. The BLM shall monitor the desert pupfish and its habitat to document levels of take and determine effectiveness of conservation measures if the species is reestablished:

   1.1. The BLM shall continue to monitor desert pupfish populations and habitat;

   1.2. The BLM shall provide to us copies of any reports regarding implementation of the proposed action. We are especially interested in reports that include an analysis of the effectiveness of the mitigation measures. All take must be reported annually.

2. Measures shall be implemented to reduce the impacts of the proposed wildlife management actions, livestock grazing, recreation, and utility corridors:

   2.1. Before nonindigenous aquatic species control activities occur, monitor for the presence of desert pupfish and remove and repatriate desert pupfish as appropriate;

   2.2. Reduce the speed limit to 10mph at the EC901 crossings at Empire Gulch and Cienega Creek, and at the EC910D crossing at the Narrows and post the speed limit at each crossing;

   2.3. To minimize impacts from recreation and as part of the proposed public education program, include information on the presence of listed species in the area, their status and importance, and prohibitions. The educational venue can take any from, but the first one with this message must be completed within one year of the date of this biological opinion;

   2.4. Use of creek crossings and watering areas for livestock should minimize impacts to desert pupfish;

A. When considering which creek crossings to use for livestock, avoid crossings which are known to be occupied by desert pupfish;

B. If a crossing within occupied habitat must be used, use it for 14 days or less, and not the 21 days specified in the RMP;

C. Insure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly;

2.5. Check the fence of all exclosures that have occupied desert pupfish habitat at least once when the adjacent pasture is being used. If there is a problem with the fence and livestock are in that pasture, repair the fence within one week of the fence problem being discovered. If cattle are not in the adjacent pasture, repair the fence before livestock are returned to the pasture;

2.6. All new repressos must be located to minimize the likelihood of floods moving nonindigenous aquatic species into topminnow habitat;

A. New repressos should be located outside of the current 100-year floodplain when possible;

B. Repressos shall be constructed so runoff from precipitation captured by each represso is minimal;

C. The maximum water depth in a represso may not exceed four feet at any spot;

D. The repressos shall be used only when required to water cattle and shall be allowed to dry when no longer needed to water cattle;

E. If repressos do not dry within six months after use ends, they shall be drained;

F. Repressos should be located so access to the public, and potential for unauthorized release of nonindigenous species, is minimized;

3. Personnel education programs and well-defined operational procedures shall be implemented:

3.1. All personnel performing maintenance at any creek crossing will be informed of the potential presence of desert pupfish, their status, and the need to perform their duties to avoid impacts to the frog and its habitat;

3.2. All personnel performing fence maintenance at any creek crossing will be informed of the potential presence of desert pupfish, their status, and the need to perform their duties to avoid impacts to the topminnow and its habitat;

3.3. All personnel installing utility lines at the Narrows will be informed of the potential presence of desert pupfish, their status, and the need to perform their duties to avoid impacts to the topminnow and its habitat.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- We recommend that the BLM work with the Service and Arizona Game and Fish Department to reestablish the desert pupfish to suitable habitats (Recovery Plan Tasks 2 [USFWS 1993]).

- We recommend that the BLM work with the Service and Arizona Game and Fish Department to begin an aggressive program to ensure that nonindigenous aquatic organisms are not introduced to the action area, and if they are, to support actions to remove them (Recovery Plan Task 1.3, 2).

- We recommend that the BLM work with all interested parties in the Cienega Creek watershed to insure that groundwater use does not exceed annual recharge (Recovery Plan Task 1.3, 2).

GILA CHUB (*Gila intermedia*)

Conclusion

After reviewing the current status of Gila chub, the environmental baseline for the action area, the effects of the proposed Las Cienegas NCA RMP and the cumulative effects, it is the Service's conference opinion that the action, as proposed, is not likely to jeopardize the continued existence of the proposed endangered Gila chub and is not likely to destroy or adversely modify proposed critical habitat. We base these conclusions on the following:

1. The populations of Gila chub in the action area are robust;

2. The proposed action affects a small portion of the species' range;

3. All proposed actions that may lead to take of Gila chub have conservation actions included which should minimize effects to the species;

4. The BLM proposes actions in the proposed management plan that will help conserve and recover the species; and

5. The ecological condition of the area should be maintained and improved during the 20-year life of the RMP.

Incidental Take Statement

Section 9 of the Act and Federal regulation following section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by FWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by FWS as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The prohibitions against taking the species found in section 9 of the Act do not apply until the species is listed. However, the Service advises the BLM to consider implementing the following reasonable and prudent measures. If this conference opinion is adopted as a biological opinion following a listing or designation, these measures, with their implementing terms and conditions, will be nondiscretionary, and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued to any applicants, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity covered by this incidental take statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require any applicants to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(I)(3)].

Amount or Extent of Take

The Service anticipates that the proposed action will result in incidental take of Gila chub. Incidental take of the Gila chub will be difficult to detect for the following reasons: dead fish are difficult to find, cause of death may be difficult to determine, and losses may be masked by seasonal fluctuations in numbers or other causes. However, take of Gila chub may occur from livestock grazing, recreation, and wildlife management actions. We anticipate that the following take could occur as a result of the proposed action:

1. Mortality, injury, pursuit, capture, collection, trapping, or harassment of up to 500 Gila chub during each control action for nonindigenous aquatic species;
2. Mortality and injury of up to 10 Gila chub annually from the use and maintenance of road and trail crossings in occupied habitat, including contamination from vehicles;
3. Harassment of up to 10 Gila chub annually from general recreation use of the area, and use of the Agricultural Fields group site;
4. Mortality, injury, or harassment of up to 100 Gila chub annually during livestock management actions associated with exclosures, creek crossing and watering areas, and at Cinco Ponds or other reestablishment areas;
5. Mortality of up to 1,000 Gila chub from the introduction or increase of nonindigenous species, associated with the repressos and recreation and other human access;
6. Mortality, injury, or harassment of up to 10 Gila chub annually during fence maintenance in occupied habitat; and
7. Mortality, injury, or harassment of up to 25 Gila chub annually during construction of a utility line in the utility corridor that crosses the Narrows.

Effect of Take

In this biological opinion, the Service finds the anticipated level of take is not likely to result in jeopardy to the proposed species or destruction or adverse modification of proposed critical habitat.

Reasonable and Prudent Measures and Terms and Conditions

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the Gila chub. The prohibitions against taking the species found in section 9 of the Act do not apply until the species is listed. However, the Service advises the BLM to consider implementing the following reasonable and prudent measures. If this conference opinion is adopted as a biological opinion following a listing or designation, these measures, with their implementing terms and conditions, will be nondiscretionary.

To be exempt from the prohibitions of section 9 of the Act once the proposed Gila chub is listed, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and monitoring requirements. If this conference opinion is adopted as a biological opinion following a listing or designation, these terms and conditions will be non-discretionary:

1. The BLM shall continue to monitor the Gila chub and its habitat to document levels of take and determine effectiveness of conservation measures:

   1.1. The BLM shall continue to monitor Gila chub populations and habitat as proposed;

   1.2. An annual report will be done which summarizes the implementation of the proposed action and any incidental take that occurred. We are especially interested in an analysis of the effectiveness of the conservation measures and terms and conditions.

2. Measures shall be implemented to reduce the impacts of the proposed wildlife management actions, livestock grazing, recreation, and utility corridors:

   2.1. Before nonindigenous aquatic species control activities occur, monitor for the presence of Gila chub and remove and repatriate Gila chub as appropriate;

   2.2. Reduce the speed limit to 10mph at the EC901 crossings at Empire Gulch and Cienega Creek, and post the speed limit at each crossing;

   2.3. To minimize impacts from recreation and as part of the proposed public education program, include information on the presence of listed species in the area, their status and importance, and prohibitions. The educational venue can take any from, but the first one with this message must be completed within one year of the date of this biological opinion;

   2.4. Use of creek crossings and watering areas for livestock should minimize impacts to Gila chub;

      A. When considering which creek crossings to use for livestock, avoid crossings which are known to be occupied by Gila chub when possible (presently, most crossings are occupied by chub);

      B. Monitor crossings at least once a year to determine if there are problems with erosion, sedimentation, vegetation condition, or any other resource conditions;

      C. Insure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly;

2.5. Check the fences of all exclosures that have occupied Gila chub habitat at least once when the adjacent pasture is being used. If there is a problem with the fence and livestock are in that pasture, repair the fence within one week of the fence problem being discovered. If cattle are not in the adjacent pasture, repair the fence before livestock are returned to the pasture;

2.6. All new repressos must be located to minimize the likelihood of floods moving nonindigenous aquatic species into chub habitat;

A. Any new repressos shall be located outside the 100-year floodplain;

B. Repressos shall be constructed so runoff from precipitation captured by each represso is minimal;

C. The maximum water depth in a represso may not exceed four feet at any spot;

D. The repressos shall be used only when required to water cattle and shall be allowed to dry when no longer needed to water cattle;

E. If repressos do not dry within six months after use ends, they shall be checked for nonindigenous aquatic species first then drained;

F. Repressos should be located so access to the public, and potential for unauthorized release of nonindigenous species, is minimized;

3. Personnel education programs and well-defined operational procedures shall be implemented:

3.1. All personnel performing maintenance at any creek crossing will be informed of the potential presence of Gila chub, their status, and the need to perform their duties to avoid impacts to the fish and its habitat;

3.2. All personnel installing utility lines at the Narrows will be informed of the potential presence of Gila chub, their status, and the need to perform their duties to avoid impacts to the chub and its habitat.

If the Gila chub is listed as threatened or endangered and any subsequent adoption of the conference opinion, the BLM shall request reinitiation of consultation if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect the species in a manner or to an extent not considered in the conference opinion; 3) the BLM is subsequently modified in a manner that causes an effect to the species that was not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action.

The incidental take statement provided in the conference opinion does not become effective until the species is listed and the conference opinion is adopted as the biological opinion issued through formal consultation. At that time, the project will be reviewed to determine whether any take of the proposed species has occurred. Modifications of the opinion and incidental take statement may be appropriate to reflect that take. No take of the proposed species may occur between the listing of the species and the adoption of the conference opinion through formal consultation, or the completion of a subsequent formal consultation. Although not required, we recommend that the BLM implement the reasonable and prudent measures and terms and conditions before our final listing decision. If the species is subsequently listed, implementation of reasonable prudent measures and terms and conditions in any conference opinion adopted as a biological opinion, is mandatory.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- We recommend that the BLM continue to work with the Service and Arizona Game and Fish Department to reestablish the Gila chub to suitable habitats.
- We recommend the BLM work with the Service and Arizona Game and Fish Department to begin an aggressive program to ensure that nonindigenous aquatic organisms are not introduced to or spread in the action area, and if they are, to support actions to remove them.
- We recommend the BLM work with all interested parties in the Cienega Creek watershed to insure that groundwater use does not exceed annual recharge.
- We recommend the BLM consider combining grazing allotments when the opportunities arise. Larger allotments tend to have more management flexibility in relation to managing the impacts of livestock grazing, natural resources, and also tend to be more economical.

For the Service to be kept informed of actions reducing or avoiding adverse effects or benefiting listed species or their habitat, the Service requests notification of the implementation of any conservation recommendations.

GILA TOPMINNOW (*Poeciliopsis o. occidentalis*)

Conclusion

After reviewing the current status of Gila topminnow, the environmental baseline for the action area, the effects of the proposed Las Cienegas NCA RMP and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the endangered Gila topminnow. No critical habitat has been designated, thus, none would be affected. We base these conclusions on the following:

1. The populations of Gila topminnow are robust;
2. All proposed actions that may lead to take of Gila topminnow have conservation actions included which should minimize effects to the species;
3. The BLM proposes actions identified in the recovery plan that will help conserve and recover the species; and
4. The ecological condition of the area should be maintained and improved during the 20-year life of the RMP.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significant impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the Act if such taking meets the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued to any applicants, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity covered by this incidental take statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require any applicants to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

The Service anticipates that the proposed action will result in incidental take of Gila topminnow. Incidental take of the Gila topminnow will be difficult to detect for the following reasons: dead fish are difficult to find, cause of death may be difficult to determine, and losses may be masked by seasonal fluctuations in numbers or other causes. However, take of Gila topminnow may occur from livestock grazing, recreation, and wildlife management actions. We anticipate that the following take could occur as a result of the proposed action:

1. Mortality, injury, pursuit, capture, collection, trapping, or harassment of up to 5,000 Gila topminnow during each control action for nonindigenous aquatic species;
2. Mortality and injury of up to 100 Gila topminnow annually from the use and maintenance of road and trail crossings in occupied habitat, including contamination from vehicles;
3. Harassment of up to 10 Gila topminnow annually from general recreation use of the area, and use of the Agricultural Fields group site;
4. Mortality, injury, or harassment of up to 100 Gila topminnow annually during livestock management actions associated with exclosures, creek crossing and watering areas, and at Cinco Ponds or other reestablishment areas;
5. Mortality of up to 1,000 Gila topminnow from the introduction or increase of nonindigenous species, associated with the repressos and recreation and other human access;
6. Mortality, injury, or harassment of up to 10 Gila topminnow annually during fence maintenance in occupied habitat; and

7. Mortality, injury, or harassment of up to 50 Gila topminnow annually during construction of a utility line in the utility corridor that crosses the Narrows.

Effect of Take
In this biological opinion, the Service finds the anticipated level of take is not likely to jeopardize the continued existence of the endangered Gila topminnow.

Reasonable and Prudent Measures and Terms and Conditions
The following reasonable and prudent measures are necessary and appropriate to minimize take of the Gila topminnow. To be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. The BLM shall continue to monitor the Gila topminnow and its habitat to document levels of take and determine effectiveness of conservation measures:
   - 1.1. The BLM shall continue to monitor Gila topminnow populations and habitat as proposed;
   - 1.2. An annual report will be done which summarizes the implementation of the proposed action and any incidental take that occurred. We are especially interested in an analysis of the effectiveness of the conservation measures and terms and conditions.

2. Measures shall be implemented to reduce the impacts of the proposed wildlife management actions, livestock grazing, recreation, and utility corridors:
   - 2.1. Before nonindigenous aquatic species control activities occur, monitor for the presence of Gila topminnow and remove and repatriate Gila topminnow as appropriate;
   - 2.2. Reduce the speed limit to 10mph at the EC901 crossings at Empire Gulch and Cienega Creek, and at the EC910D crossing at the Narrows and post the speed limit at each crossing;
   - 2.3. To minimize impacts from recreation and as part of the proposed public education program, include information on the presence of listed species in the area, their status and importance, and prohibitions. The educational venue can take any from, but the first one with this message must be completed within one year of the date of this biological opinion;
   - 2.4. Use of creek crossings and watering areas for livestock should minimize impacts to Gila topminnow;
     - A. When considering which creek crossings to use for livestock, avoid crossings which are known to be occupied by Gila topminnow when possible (presently, most crossing are occupied by topminnow);
     - B. Monitor crossings at least once a year to determine if there are problems with erosion, sedimentation, vegetation condition, or any other resource conditions;
     - C. Insure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly;

2.5. Check the fence of all exclosures that have occupied Gila topminnow habitat at least once when the adjacent pasture is being used. If there is a problem with the fence and livestock are in that pasture, repair the fence within one week of the fence problem being discovered. If cattle are not in the adjacent pasture, repair the fence before livestock are returned to the pasture;

2.6. All new repressos must be located to minimize the likelihood of floods moving nonindigenous aquatic species into topminnow habitat;

A. Repressos should be located outside of the current 100-year floodplain when possible;

B. Repressos shall be constructed so runoff from precipitation captured by each represso is minimal;

C. The maximum water depth in a represso may not exceed four feet at any spot;

D. The repressos shall be used only when required to water cattle and shall be allowed to dry when no longer needed to water cattle;

E. If repressos do not dry within six months after use ends, they shall be drained;

F. Repressos should be located so access to the public, and potential for unauthorized release of nonindigenous species, is minimized;

3. Personnel education programs and well-defined operational procedures shall be implemented:

3.1. All personnel performing maintenance at any creek crossing will be informed of the potential presence of Gila topminnow, their status, and the need to perform their duties to avoid impacts to the fish and its habitat;

3.2. All personnel performing fence maintenance at any creek crossing will be informed of the potential presence of Gila topminnow, their status, and the need to perform their duties to avoid impacts to the topminnow and its habitat;

3.3. All personnel installing utility lines at the Narrows will be informed of the potential presence of Gila topminnow, their status, and the need to perform their duties to avoid impacts to the topminnow and its habitat.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. We recommend that the BLM continue to work with the Service and Arizona Game and Fish Department to reestablish the Gila topminnow to suitable habitats (Recovery Plan Tasks 2.1, 2.2; Weedman 1999) .

- We recommend that the BLM work with the Service and Arizona Game and Fish Department to begin an aggressive program to ensure that nonindigenous aquatic organisms are not introduced to the action area, and if they are, to support actions to remove them (Recovery Plan Task 1.4, 2.4, 2.5).

- We recommend that the BLM work with all interested parties in the Cienega Creek watershed to insure that groundwater use does not exceed annual recharge (Recovery Plan Task 1.3, 2.3).

- We recommend that the BLM consider combining grazing allotments when the opportunities arise. Larger allotments tend to have more management flexibility in relation to managing the impacts of livestock grazing, natural resources, and also tend to be more economical.

For the Service to be kept informed of actions reducing or avoiding adverse effects or benefiting listed species or their habitat, the Service requests notification of the implementation of any conservation recommendations.

HUACHUCA WATER UMBEL (*Lilaeopsis schaffneriana* var. *recurva*)

Conclusion

After reviewing the current status of Huachuca water umbel, the environmental baseline for the action area, the effects of the proposed Las Cienegas NCA RMP and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the Huachuca water umbel. No designated critical habitat occurs in the action area, thus, none would be affected. We base these conclusions on the following:

1. Huachuca water umbel is rare in the action area;
2. The proposed action affects a small portion of the species' range;
3. All proposed actions that may affect the Huachuca water umbel have conservation actions included which should minimize effects to the species and may actually benefit the umbel and its habitat; and
4. The ecological condition of the area should be maintained and improved during the 20-year life of the RMP.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significant impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the Act if such taking meets the terms and conditions of this Incidental Take Statement.

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of federally listed endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- The BLM should provide assistance to the Service in developing a recovery plan for the Huachuca water umbel;
- The BLM should fund additional surveys for the water umbel on BLM lands, and support research on the ecology of the species; and
- The BLM should work with all interested parties in the Cienega Creek watershed to insure that groundwater use does not exceed annual recharge.

For the Service to be kept informed of actions reducing or avoiding adverse effects or benefiting listed species or their habitat, the Service requests notification of the implementation of any conservation recommendations.

LESSER LONG-NOSED BAT (*Leptonycteris curasoae yerbabuenae*)

Conclusion

After reviewing the current status of lesser long-nosed bat, the environmental baseline for the action area, the effects of the proposed Las Cienegas NCA RMP and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the proposed endangered lesser long-nosed bat. No critical habitat has been designated, thus, none would be affected. We base these conclusions on the following:

1. The proposed action affects a small portion of the species' range;
2. All proposed actions that may affect the lesser long-nosed bat have conservation actions included which should minimize effects to the species; and
3. The ecological condition of the area should be maintained and improved during the 20-year life of the RMP.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significant impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the Act if such taking meets the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued to any applicants, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity covered by this incidental take statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require any applicants to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant documents, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(I)(3)].

Amount or Extent of Take

We anticipate lesser long-nosed bats could be taken as a result of floral resources within core use-areas.

1. All lesser long-nosed bats, whose core use-areas include pastures or allotments that are grazed during the agave bolting season, by human visitation, or by prescribed burning, though harm.

We anticipate incidental take of lesser long-nosed bats as a result of harm will be difficult to detect for the following reasons: dead animals are difficult to find and cause of death may be difficult to determine. However, take of lesser long-nosed bat may occur from livestock grazing, prescribed burning, and human visitation affects to floral resources. The level of take anticipated in the form of harm could be detected either by finding bats taken as a result of the grazing, burning, or recreation program, or if the following surrogate condition is met:

1. Flowering agave densities within core use-areas decline below the natural variability of the species (0.2-5.4 flowering plants /ha).

Effect of Take

In this biological opinion, the Service finds the anticipated level of take is not likely to jeopardize the continued existence of the endangered lesser long-nosed bat.

Reasonable and Prudent Measures and Terms and Conditions

The following reasonable and prudent measures are necessary and appropriate to minimize take of the lesser long-nosed bat. To be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. The BLM shall continue to monitor the lesser long-nosed bat and its habitat to document levels of take and determine effectiveness of conservation measures.

1.1. The BLM shall develop with us a monitoring program to determine density of flowering agave stalks within core use-areas.

1.2. The BLM shall implement the monitoring plan.

1.3. An annual report will be done which summarizes the implementation of the proposed action and any incidental take that occurred. We are especially interested in an analysis of the effectiveness of the conservation measures and terms and conditions.

2. Measures shall be implemented to reduce the impacts of the proposed livestock grazing and recreation management actions on agaves.

2.1. For roads designated to be closed within lesser long-nosed bat core use-areas, close them before December 31, 2010;

2.2. Ensure that no more than 20 percent of agaves burned during prescribed fire are killed by the fire within lesser long-nosed bat core use-areas.

2.3. Do not impact more than one percent of the agaves present within 0.5 miles of any new road, trail, fence, recreational, or other infrastructure such as parking pullouts, repressos, and educational facilities within lesser long-nosed bat core use-areas. If more than one percent is impacted, plant and insure the survival of enough agaves so that the total number of agaves lost is less than one percent.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- We recommend that the BLM monitor livestock utilization within all pastures used during the agave-bolting season (Recovery plan task 2, USFWS 1997).
- We recommend that the BLM investigate and monitor the invasion of Lehmann lovegrass in the planning area and assist other agencies in developing methods for controlling this nonindigenous grass (Recovery plan task 2, USFWS 1997).
- We recommend that the BLM apply restrictions on the exposure of bolting agaves to livestock use, so that no allotment has more than 50 percent of the area accessible to livestock during the agave-bolting period (April 15 through September 15) during any one year (Recovery plan task 1, USFWS 1997).
- We recommend that the BLM continue support and cooperation in the investigations of agave relationships to livestock grazing, and of the effects of prescribed fire on paniculate agaves (Recovery plan task 1, USFWS 1997).
- We recommend that the BLM implement the Lesser Long-nosed Bat Recovery Plan, as appropriate.

For the Service to be kept informed of actions reducing or avoiding adverse effects or benefiting listed species or their habitat, the Service requests notification of the implementation of any conservation recommendations.

SOUTHWESTERN WILLOW FLYCATCHER (*Empidonax traillii extimus*)

Conclusion

After reviewing the current status of southwestern willow flycatcher, the environmental baseline for the action area, the effects of the proposed Las Cienegas NCA RMP and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the endangered southwestern willow flycatcher. No critical habitat has been designated, thus, none would be affected. We base these conclusions on the following:

1. Southwestern willow flycatchers are rare in the action area;
2. The proposed action affects a small portion of the species' range;
3. All proposed actions that may affect the southwestern willow flycatcher have conservation actions included which should minimize effects to the species; and
4. The ecological condition of the area should be maintained and improved during the 20-year life of the RMP.

Incidental Take Statement

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significant impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the Act if such taking meets the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued to any applicants, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity covered by this incidental take statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require any applicants to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

The Service anticipates that the proposed will result in incidental take of southwestern willow flycatcher. Incidental take of the southwestern willow flycatcher will be difficult to detect for the following reasons: dead animals are difficult to find and cause of death may be difficult to determine. However, take of southwestern willow flycatcher may occur from livestock grazing and human visitation. We anticipate that the following take could occur as a result of the proposed action:

1. Harassment of not more than 1 southwestern willow flycatchers during the life of the RMP from the use and maintenance of road and trail crossings in occupied habitat;
2. Harassment of not more than 2 southwestern willow flycatchers during the life of the RMP from general recreational use of the area, and use of the Agricultural Fields group site;
3. Harassment of not more than 2 southwestern willow flycatchers during the life of the RMP from livestock management actions associated with exclosures and creek crossing and watering areas;
4. Mortality of not more than 1 southwestern willow flycatchers during the life of the RMP from the introduction or increase of brown-headed cowbirds associated with livestock grazing and human visitation; and
5. Harassment of not more than 1 southwestern willow flycatcher during the life of the RMP from fence maintenance in occupied habitat. The Fish and Wildlife Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. §§ 668-668d), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

Effect of Take
In this biological opinion, the Service finds the anticipated level of take is not likely to jeopardize the continued existence of the endangered southwestern willow flycatcher.

Reasonable and Prudent Measures and Terms and Conditions
The following reasonable and prudent measures are necessary and appropriate to minimize take of the southwestern willow flycatcher. To be exempt from the prohibitions of section 9 of the Act, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. The BLM shall continue to monitor the southwestern willow flycatcher and its habitat to document levels of take and determine effectiveness of conservation measures;
    1.1. The BLM shall continue to monitor southwestern willow flycatcher populations and habitat:
    a. If flycatchers are detected at any time of year, contact the Service, and determine their breeding status using the following criteria:
        - repeated presence of a non-singing southwestern willow flycatcher, or a southwestern willow flycatcher using vocalizations other than the primary song next to an individual exhibiting territorial behavior;
        - observation of a southwestern willow flycatcher carrying nesting material;
        - observation of southwestern willow flycatchers copulating;
        - verification of a willow flycatcher nest;

- observation of a southwestern willow flycatcher carrying food items; and/or
- observation of a juvenile southwestern willow flycatcher.

b. If breeding status is confirmed or suspected, continue monitoring efforts by visiting breeding locations at least once during each of the three 10-day periods of June and July or until observation indicates that southwestern willow flycatcher have stopped breeding efforts. Collect breeding and habitat data and determine if nest parasitism by brown-headed cowbirds is occurring as outlined in the survey protocol (Tibbitts et al. 1994) and submit the completed data forms to AGFD Partners in Flight Program.

1.2. An annual report will be done which summarizes the implementation of the proposed action and any incidental take that occurred. We are especially interested in an analysis of the effectiveness of the conservation measures and terms and conditions.

2. Measures shall be implemented to reduce the impacts of the proposed wildlife management actions, livestock grazing, recreation, and utility corridors:

2.1. Reduce the speed limit to 10mph at the EC901 crossings at Empire Gulch and Cienega Creek, and at the EC910D crossing at the Narrows and post the speed limit at each crossing;

2.2 To minimize impacts from recreation and as part of the proposed public education program, include information on the presence of listed species in the area, their status and importance, and prohibitions. The educational venue can take any form, but the first one with this message must be completed within one year of the date of this biological opinion;

2.3 Use of creek crossings and watering areas for livestock should minimize impacts to southwestern willow flycatcher;

A. When considering which creek crossings to use for livestock, do not use crossings which are known to be occupied by southwestern willow flycatcher. If southwestern willow flycatcher surveys are not done before crossings are used during the flycatcher breeding and nesting period, then do not use crossings that traverse areas identified as suitable flycatcher habitat (Table 10). Temporary crossings for livestock across Cienega Creek may be used. Locations of temporary crossings will be determined in coordination with the Service and the AGFD;

B. Insure that livestock do not linger in crossings with aquatic habitat and are moved through the crossing promptly;

2.4. Do not permit organized groups access to areas with nesting southwestern willow flycatchers during the breeding season;

2.5. Check the fence of all exclosures that have occupied southwestern willow flycatcher habitat at least once when the adjacent pasture is being used. If there is a problem with the fence and livestock are in that pasture, repair the fence within one week of the fence problem being discovered. If cattle are not in the adjacent pasture, repair the fence before livestock are returned to the pasture;

2.6. To minimize the potential for recreationists impacting southwestern willow flycatchers, use the Maternity Well or Airstrip sites if nesting flycatchers are present at the Agricultural Fields Group Site and limit the access of organized groups to the area;

2.7. If brown-headed cowbirds are found to be parasitizing the nests of southwestern willow flycatchers, begin monitoring nest parasitism for an additional year, using established protocols. If nest parasitism is greater than 30 percent during the two years, begin a cowbird trapping program following the guidance in the draft southwestern willow flycatcher recovery plan (USFWS 2002) and other established protocols;

A. Determine the number and location of traps based on the distribution of willow flycatcher along the drainage, but include a minimum of two traps;

B. Check all traps at least once each day; individual traps should be checked at about the same time each day;

C. Maintain data on the brown-headed cowbird trapping program, including:
- date trapping is initiated and stopped;
- locations of traps marked on a topographic map;
- variations from established protocol;
- number and sex of brown-headed cowbirds and non-target species captured;
- date of each capture;

D. Euthanize all captured brown-headed cowbirds in a humane manner; dispose of the dead birds properly;

E. Report to the Service each year on the survey and trapping program.

2.8. In the pasture with the Narrows, implement one of the three following actions:

A. Remove all livestock by March 30;

OR

B. Exclude the Narrows from livestock grazing all year;

OR

C. In the riparian corridor that is still open to grazing, grass and herbaceous vegetation will have a stubble height of at least six inches when livestock are removed from the pasture. The riparian corridor includes the high terrace with mesquite. Livestock must be removed from the pasture not later than May 1.

3. Personnel education programs and well-defined operational procedures shall be implemented.

3.1. All personnel performing maintenance at any creek crossing will be informed of the potential presence of southwestern willow flycatcher, their status, and the need to perform their duties to avoid impacts to the flycatcher and its habitat; and

3.2. All personnel performing fence maintenance at any creek crossing will be informed of the potential presence of southwestern willow flycatcher, their status, and the need to perform their duties to avoid impacts to the willow flycatcher and its habitat.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- We recommend that the BLM work with the Service and Arizona Game and Fish Department and other appropriate parties to implement the Southwestern Willow Flycatcher Recovery Plan (USFWS 2002) (Recovery Plan Tasks 2.1, 2.2);

- We recommend that the BLM work with the Service and Arizona Game and Fish Department to begin an aggressive program to ensure that nonindigenous aquatic organisms are not introduced to the action area, and if they are, to support actions to remove them (Recovery Plan Task 1.4, 2.4, 2.5).

- We recommend that the BLM work with all interested parties in the Cienega Creek watershed to insure that groundwater use does not exceed annual recharge (Recovery Plan Task 1.3, 2.3).

For the Service to be kept informed of actions reducing or avoiding adverse effects or benefiting listed species or their habitat, the Service requests notification of the implementation of any conservation recommendations.

From Appendix A: CONCURRENCES

JAGUAR (*Panthera onca arizonensis*)

Conclusion

After reviewing the status of the species, the environmental baseline for the action area, and the effects of the proposed action, the Service concurs with the BLM's determination that the proposed action may affect, but is not likely to adversely affect the jaguar for the following reasons:

- no jaguar have been recorded in the area and they are unlikely to occur;
- suitable dispersal habitat may be present, but habitat for resident jaguars is minimal at best;
- dispersal habitat will be maintained; and
- expected levels of recreation are not expected to discourage use of the area for jaguar movement.

APPENDIX 6

Area of Critical Environmental Concern (ACEC) Management Prescriptions

Empire-Cienega ACEC

Goals. Protect and enhance watershed, grassland, and threatened/endangered wildlife resources, emphasizing total ecosystem management. Reduce the safety hazard caused by areas of unstable soils and reduce the amount of sediment production from these areas.

Objectives

1. Resolve non-federal land use conflicts.
2. Maintain adequate instream flows to support aquatic and riparian resources.
3. Maintain water quality to support aquatic, riparian and fish and wildlife values.
4. Maintain or improve riparian condition to meet objectives for Riparian Proper functioning Condition (PFC) and Threatened and Endangered (T/E) fish and wildlife habitat, including but not limited to a combination of maintenance of adequate woody species regeneration, promotion of mixed-aged stands of woody species, promotion of mature cottonwood overstory, and maintenance of cienega habitats.
5. Maintain or improve upland condition to meet objectives for proper functioning condition and desired future conditions of uplands (maintain or improve ecological site similarity to potential natural community).
6. Minimize surface disturbance and erosion through adequate controls on recreational activities, livestock grazing and other human uses.
7. Educate the public regarding riparian and threatened/endangered wildlife issues and management needs.
8. Promote the recovery of the Gila Topminnow.
9. Increase stability in the soil piping and headcutting areas.
10. Maintain or improve water quality in the Cienega Creek system.
11. Stabilize incised channel banks within these unstable soil areas.
12. Reduce surface disturbance and vehicle use within these areas of soil piping and headcutting.
13. Increase public safety.
14. Prevent the introduction of and control non-native invasive species in the ACEC.

Management Prescriptions

1. Designate about 49,000 acres of BLM-administered land as an ACEC.
2. Acquire non-federal lands from willing sellers within the ACEC boundaries and incorporate these acquired lands as part of the ACEC.
3. Acquire water rights including instream flow rights for Cienega Creek sufficient to support aquatic fish and wildlife resources and riparian and aquatic habitats.
4. Do not open ACEC to mineral entry and do not permit mineral material sales or surface occupancy for oil and gas leases within the ACEC.
5. Limit motorized vehicles to designated roads and close non-essential roads.
6. Minimize building of recreation and livestock developments in the 100-year flood plain. Limit developments to those that are needed to reduce impacts on riparian areas within the ACEC.

7. Limit livestock use in riparian areas of the ACEC except for crossing lanes, watering areas and specific areas where livestock grazing is identified and used as a management tool to achieve a riparian or aquatic related resource objective.
8. Implement a livestock grazing system consistent with the goals and objectives of the ACEC.
9. Prohibit recreational gold panning, dredging, or sluicing within the ACEC.
10. Prohibit overnight camping within the riparian areas of the ACEC (defined as within 100 feet of the water's edge). Camping within the 100-year floodplain would be permitted if consistent with management prescriptions for the remainder of the planning area.
11. Limit crossings of Cienega Creek for group activities to dry crossings or the designated road and trail crossings identified in Map 4.
12. Develop educational brochures and signs promoting public awareness of threatened and endangered fish and wildlife and riparian resources and their needs.
13. Introduce Gila topminnow from Cienega Creek into available habitats (as fully protected) to provide a refugia for the Cienega Creek population.
14. Include sensitive riparian habitats within the ACEC as rights-of-way avoidance areas (MAP A6-1). Access routes for maintenance of existing and future utility lines will not cross perennial reaches of Cienega Creek except at designated crossings.
15. Implement the Wood Canyon Watershed Activity Plan (BLM 1989) by doing the following:

- Find and monitor sinkholes and headcutting areas.
- Close to vehicular traffic areas that exhibit a high degree of soil piping and headcutting.
- In these unstable areas relocate existing and future roads away from incised channels.
- Reduce the amounts of overland flows reaching these unstable areas by diverting flows or increasing vegetative cover in adjacent areas.
- Stabilize and rehabilitate shallow incised channels to reduce lateral flow by structural or vegetative methods.
- Stabilize incised channel banks with increased riparian vegetation where possible.
- Decrease the depth of intermittent incised channels through structural methods to retain sediments.

16. Coordinate with surrounding landowners and managers, including the Forest Service, Arizona State Land Department, and Pima and Santa Cruz Counties to maintain or improve linkages of undeveloped lands in the region.
17. Coordinate with the Forest Service through the Forest Plan Revision process to consider related designations such as research natural areas for adjacent lands such as the western Whetstone Mountains area.
18. Implement a vegetation treatment program to aid in restoration of biological resources and processes.

Appleton-Whittell ACEC

The Appleton-Whittell ACEC was designated on 3,141 acres of BLM-administered lands in the Phoenix RMP (1988). The Appleton-Whittell ACEC is the public land portion of the 8,000-acre Appleton-Whittell Biological Research Sanctuary (Research Ranch) managed by National Audubon Society. The ACEC is part of a unique laboratory for studying the effects of non-grazing in a desert grassland.

Management Objective: To cooperate in the research objectives of the Research Ranch.

Management Prescriptions:

- Designate an ACEC
- Limit motorized vehicles to designated roads and trails
- Prohibit land use actions except as authorized by Research Ranch
- Do not open to mineral location, leasing, or sales
- Implement 1986 BLM/National Audubon Society MOU
- Prohibit surface occupancy for oil/gas lease development

APPENDIX 7

Las Cienegas Acquisition Strategy

Purpose and Need

The Sonoita Valley Acquisition Planning District (APD) was designated in the Act establishing Las Cienegas National Conservation Area (NCA) in order to provide for future acquisitions of important conservation land within the Sonoita Valley region of the State of Arizona. The Sonoita Valley APD consists of approximately 142,800 acres of land in the Pima and Santa Cruz Counties, including the 47,000-acre NCA (see Map 1-2).

The Las Cienegas NCA Act directs that "The Secretary shall negotiate with land owners for the acquisition of lands and interest in lands suitable for Conservation Area expansion that meet the purposes described in section 4(a)" (of the Act). The Secretary shall only acquire property under this Act pursuant to section 7 (of the Act)". The Act requires that acquisitions of lands or interest in lands be from willing sellers only.

The BLM is directed to administer the public lands within the Sonoita Valley APD pursuant to the Act and the applicable provisions of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.), subject to valid existing rights, and in accordance with the management plan. Public lands within the Sonoita Valley APD shall become part of the Conservation Area when they become contiguous with the Conservation Area. Management of the public lands within the Sonoita Valley APD is to be coordinated with that of surrounding county, State, and private lands consistent with the provisions of subsection 3(d) of the Act.

Objectives of the Las Cienegas NCA Acquisition Strategy

Las Cienegas NCA was established to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the unique and nationally important aquatic, wildlife, vegetative, archaeological, paleontological, scientific, cave, cultural, historical, recreational, educational, scenic, rangeland, and riparian resources and values of the public lands while allowing livestock grazing and recreation to continue in appropriate areas.

The objectives of the Las Cienegas NCA acquisition strategy are the following:

1. Consolidate land ownership within the NCA boundary to better conserve, protect, and enhance the values and resources for which the NCA was established, to provide for livestock grazing and recreation in appropriate areas, and to improve overall management efficiency.

2. Acquire lands or interest in lands from willing sellers within the Sonoita Valley APD that meet the purposes of the NCA, for inclusion or potential future inclusion into the NCA.

3. Coordinate with interested parties on acquisitions through the Sonoita Valley Planning Partnership (SVPP) process to ensure accordance with SVPP developed resource goals and objectives and with the management plan.

Acquisition Criteria

Lands considered for Acquisition within the NCA and Sonoita Valley APD boundaries will be prioritized based on consideration of the following criteria including values, uses and issues:

1. *What are the resource values and uses of the lands?*

   Criteria

   - Riparian areas (streams and wetlands).
   - Watersheds of important riparian areas.
   - Rare plant communities.
   - High-value wildlife habitat, including important habitat for threatened and endangered species and major linkage areas that provide for wildlife movements.
   - Significant cultural and paleontological properties.
   - Areas with high visual quality.
   - High-value for dispersed recreation opportunities.
   - High-value rangelands that support livestock grazing operations.
   - Presence of well sites or other water sources.
   - Lands that will maintain or provide legal access to public lands.
   - Lands previously proposed for some type of protective designation.

2. *What is the risk of development?*

   Criteria

   - Proximity to large urban area.
   - Proximity to major highways.
   - Proximity to other developing areas.
   - Knowledge that land owner is planning to sell property.

3. *Where is the land located?*

   Criteria

   - NCA inholding
   - Within Sonoita Valley APD and contiguous with NCA boundary (where acquisition will add it to NCA).
   - Within Sonoita Valley APD but not contiguous with NCA boundary.
   - Within the Section 8 lands (north of Interstate Highway 10).

4. *What is the size of the parcel?*

   Criteria

   - How large is the parcel?

- In general, acquiring large parcels is more feasible and cost-effective than acquiring small parcels.

Potential Priority Acquisition Blocks Based on Above Criteria

Based on the criteria listed above, the following priority blocks of land were identified as potential acquisition priorities:

- Undeveloped in-holdings within the NCA.
- Undeveloped lands contiguous to the NCA
- Lands connecting the NCA to other protected lands.
- Lands supporting several of the resource values/uses for which the NCA was established.

A subsequent strategy will be prepared between BLM, Arizona State Land Department, and other interested publics to identify specific timeframes and priorities for acquisitions.

Acquisition Methods Available

This strategy addresses both acquisitions of lands and acquisitions of interests in lands through conservation easements. In general, the BLM may acquire lands or conservation easements through purchase, exchange or donation. The Las Cienegas NCA Act further directs that all acquisitions shall be from willing sellers only.

Guidance for acquisitions within the Empire-Cienega planning area, which encompasses all of the Sonoita Valley APD plus additional lands in the valley, comes from two sources. The Las Cienegas NCA Act provides direction for acquisitions within the NCA and Sonoita Valley APD boundaries. Prior to designation of Las Cienegas NCA and Sonoita Valley APD, the source of management direction for acquisitions within the Empire-Cienega planning area was the 1994 land tenure amendment to the Safford Resource Management Plan. The land tenure amendment will continue to provide direction for any acquisitions of lands within the Empire-Cienega planning area that are outside the Sonoita Valley APD.

Acquisition Methods from Las Cienegas NCA Act:

Section 7 of the Las Cienegas NCA Act covers acquisitions of land and interests in land within the Sonoita Valley APD. Section 8 of the Act covers required reports to Congress including a report identifying protective measures for lands north of Interstate Highway 10 (referred to as Section 8 lands). The following is a summary of those sections:

Section 7 - Land Acquisitions

(a) In General -

(1) Priority to Conservation Easements - In acquiring lands or interest in lands under this section, the Secretary shall give priority to such acquisitions in the form of conservation easements.

(2) Private Lands - The Secretary is authorized to acquire privately held lands or interest in lands within the boundaries of the Acquisition Planning District only from a willing seller through donation, exchange, or purchase.

(3) County Lands - The Secretary is authorized to acquire county lands or interest in lands within the boundaries of the Acquisition Planning District only with the consent of the county through donation, exchange, or purchase.

(4) State Lands-

(A) In General - The Secretary is authorized to acquire lands or interest in lands owned by the State of Arizona located within the boundaries of the Acquisition Planning District only with the consent of the State and in accordance with State law, by donation, exchange, or purchase.

(B) Consideration - As consideration for the acquisitions by the United States of lands or interest in lands under this paragraph, the Secretary shall pay fair market value for such lands or shall convey to the State of Arizona all or some interest in Federal lands (including buildings and other improvements on such lands or other Federal property other than real property) or any other asset of equal value within the State of Arizona.

(C) Transfer of Jurisdiction - All Federal agencies are authorized to transfer jurisdiction of Federal lands or interest in lands (including buildings and other improvements on such lands or other Federal property other than real property) or any other asset within the State of Arizona to the Bureau of Land Management for the purpose of acquiring lands or interest in lands as provided for in this paragraph.

(b) Management of Acquired Lands - Lands acquired under this section shall, upon acquisition, become part of the Conservation Area and shall be administered as part of the Conservation Area. These lands shall be managed in accordance with this Act, other applicable laws, and the management plan.

Summary of Section 8. Reports To Congress, Subsection (a).

Section 8(a) of the Las Cienegas NCA Act recognized that not only were the lands within the boundary of the NCA important but that lands outside its boundary possessed unique and valuable qualities as well. The Act requires that within two years the Secretary of the Interior provide Congress with a report that describes the resource values and most effective protection measures for lands north of the Sonoita Valley APD within the Rincon Valley, Colossal Cave area, and Agua Verde Creek corridor north of Interstate 10 to provide an ecological link to Saguaro National Park and the Rincon Mountains and contribute to local government priorities. The report is currently being drafted. The report will identify protective measures for Section 8 lands that potentially may include guidance for and recommendations concerning some form of acquisitions of Section 8 lands by the BLM and/or other entities.

Acquisition Methods From the Safford RMP Land Tenure Amendment:

The Land Tenure Amendment to the Safford District Resource Management Plan (BLM 1994c) made land tenure decisions for the Empire-Cienega planning area. The Empire-Cienega Long Term Management Area was one of 24 long-term management areas (LTMAs) delineated in the land tenure plan amendment. The boundaries of the Empire-Cienega LTMA correspond to the planning area boundary in the draft and final Las Cienegas RMP/EIS. The decisions in the land tenure plan amendment have been incorporated into both the draft and final Las Cienegas RMP and are common to all alternatives. The Las Cienegas NCA Act now provides guidance for acquisitions within Las Cienegas NCA and the Sonoita Valley APD. However, some of the lands in the planning area are not inside either the NCA or the Sonoita Valley APD boundaries, and so guidance for any acquisitions of those lands continue to be covered by the Safford RMP land tenure amendment identifies acquisition methods, objectives for land acquisition within the LTMAs and identifies desired characteristics for lands to be acquired.

Acquisitions using Land and Water Conservation Fund Act

The Land and Water Conservation Fund (LWCF) Act was established 3 September 1964 by Public Law 88-578, as amended. Effective 1 January 1965, authorized through FY1989 and reauthorized through FY2015 by the Omnibus Budget Reconciliation Act of 1987.

"The purposes of this Act are to assist in preserving, developing and assuring accessibility to all citizens of the United States of America of present and future generations and visitors who are lawfully present within the boundaries of the United States of America such quality and quantity of outdoor recreation resources as may be available and are necessary and desirable for individual active participation in such recreation and to strengthen the health and vitality of the citizens of the United States by: (1) Providing funds for and authorizing Federal assistance to *States* in planning acquisition, and development of needed land and water areas and facilities and (2) Providing funds for the *Federal* acquisition and development of certain lands and other areas." More than 90% (if not all) of annual allocations over the past 10 years have been appropriated to the Federal "side" of the program. LWCF is a funding authority. LWCF is **not** an acquisition authority. The Federal Land Policy Management Act (FLPMA) is the authority under which BLM acquires property.

The 1964 legislation provided for acquisition of lands, waters, or interests in lands within exterior boundaries of: National Forest System Including Recreation Areas (administered by USDA), National Park System, National Scenic Trails, National Wild and Scenic Rivers System, National Wilderness Preservation System, and National Wildlife Refuge System. However, no mention was made of BLM or public lands. A 1989 amendment to the LWCF Act expanded to further define "eligible projects" to include BLM and acquisitions of lands, waters and interests in land within or adjacent to existing areas for conservation and recreation purposes such as: National Conservation Areas, National Recreation Areas, National Historic Trails, National Wilderness Areas. The 1989 amendment to the Act also included planning designations such as Area of Critical Environmental Concern (ACEC), Riparian Areas (RA) and Special Recreation Management Areas (SRMA). The Land and Water Conservation Fund was established for two primary purposes, Open Space and Recreation.

Conservation goals are accomplished by purchase, exchange, donation and condemnation (only for access and under special authority).

The LWCF funding **cannot** be used to develop property (improvements), manage property, manage conservation easements, acquire administrative sites, acquire property from State government (or instrumentalities thereof) [ARIZONA exception], acquire property not identified for perpetual retention (i.e. fee, easement), condemn (except for access or special authority).

Acquisitions through Federal Land Transaction Facilitation Act (FLTFA) (aka BACA Bill)

The Federal Land Transaction Facilitation Act (FLTFA) of 2000, P.L. 106-248, was enacted on 9/25/2000. FLTFA does the following:

1. Reaffirms BLM's authorities to sell and exchange public lands under FLPMA but does not amend the substantive provisions of FLPMA relating to disposals and sales.
2. Allows proceeds to be used for acquisitions of inholdings and lands with exceptional resources.

3. Limits Disposals to lands identified for disposal in approved land use plans as of July 25, 2000.

4. Imposes administrative requirements on Secretary to:
   - Identify inholdings.
   - Prioritize acquisitions of inholdings.
   - Complete Sections 205 and 206 appraisals and other legal requirements.

Under FLTFA, BLM can (1) sell public land and use the money for purchases of other lands to benefit BLM or other Federal agencies; (2) use up to 20% of the sale money to cover administrative costs; (3) use up to 80% of the non-administrative dollars within the same state as the property that was sold; (4) use the money to purchase inholdings in Federally designated areas which are any lands within special designated areas managed by BLM and also includes lands within units of the Park Service, Forest Service, USFWS, Wild and Scenic River System, National Trail System, Wilderness or WSA.

Sales are to be conducted under the authority of FLPMA Section 203 and the criteria in the sale regulations (43 CFR 2710). The law does NOT apply to disposal of minerals under section 209 of FLPMA or other types of disposal actions such as R&PP, DLE, etc. The law does not mandate any sales or establish any quotas for sales or purchases.

Other Non-Traditional Methods of Acquisition

These may include General Services Administration (GSA) transfers of property or exchanges of other federal agency assets.

Coordinated Management:

Prior to and during implementation of this acquisition strategy, it is anticipated that there will continue to be management issues arising from the intermixed land ownership patterns within the planning area. These issues may continue in some areas of the Sonoita Valley APD over the long term. Continued coordination between the BLM and appropriate State agencies, counties, private landowners and the U.S. Forest Service will be important in dealing with issues regarding management of public lands and intermixed and surrounding State Trust, county, and private lands and surrounding Forest Service lands. Section 3 of the Las Cienegas Act addresses this coordination need by directing the Secretary to coordinate the management of the public lands within the Acquisition Planning District with that of surrounding county, State, and private lands consistent with the provisions of subsection 3(d).

The Act ensures the protection of State and private lands and interests through subsection 3(d) which states that "Nothing in this Act shall be construed as affecting any property rights or management authority with regard to any lands or interest in lands held by the State of Arizona, any political subdivision of the State of Arizona, or any private property rights within the boundaries of the Acquisition Planning District. Similarly, the Act ensures the continuation of the BLM's management authority over public lands in the Sonoita Valley APD in Section 3 (e) that states "Nothing in this Act shall be construed as in any way diminishing the Secretary's or the Bureau of Land Management's authorities, rights, or responsibilities for managing the public lands within the Acquisition Planning District."

The Act also addresses coordination and cooperative agreements in subsection 6(c) of the Act which states "In order to better implement the management plan, the Secretary may enter into cooperative agreements with appropriate Federal, State, and local agencies pursuant to section 307(b) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1737(b))."

Other Related Efforts for Open Space Protection

1. Pima County's Sonoran Desert Conservation Plan.
2. Sonoita Crossroads Community Forum's Comprehensive Plan for Northeast Santa Cruz County.
3. Legislative efforts: various ballot measures, if passed, would authorize state exchanges, change designation of some state lands to conservation use, etc.
4. Land Trust efforts. The Southeast Arizona Grassland Trust is active in the Sonoita area. This should result in the acquisition of conservation easements on private lands in the Sonoita Valley with important resource values and uses.

Definitions:

Easement: The right to use land in a certain way granted by a landowner to a second party. See also Conservation Easement.

Conservation Easement: An easement to assure the permanent preservation of land in its natural state or whatever degree of naturalness the land has when the easement is granted. Can also be defined as an agreement whereby a landowner sells or donates the right to develop his or her land to the easement holder (a qualified government agency or nonprofit organization).

APPENDIX 8

INTEGRATED VEGETATION TREATMENT PROGRAM

VEGETATION TREATMENT METHODS

Along with other land management practices, the following vegetation management techniques will be used separately or in combinations to direct desired changes:

A. PRESCRIBED BURNING AND FIRE MANAGEMENT

Fire is a natural process within the grassland-savannah ecological sites. The goal of the Empire-Cienega Planning Area prescribed burning program is to simulate this process in maintaining grassland communities. To meet upland vegetation objectives, fire will be used as a tool to promote vegetation change through decreased shrub cover and increased cover by mid-to-tall-stature perennial grasses.

Prescribed burning is the planned application of fire to rangeland vegetation and fuels under specified conditions of fuels, weather, and other variables to allow the fire to remain in a predetermined area to achieve site-specific objectives. Management objectives include controlling certain plant species; enhancing growth, reproduction, or vigor of plant species; managing fuel loads, and managing vegetation community types. Prescriptions will be developed for each prescribed fire within the planning area. The area is too small to manage unplanned ignitions, so wildland fires will continue to be responded to as described in Chapter 2. Action: Implement a prescribed fire program for the ecological sites (Sandy Loam Upland, Loamy Upland, and Limy Slopes) within the Empire-Cienega Ranch according to the following:

Prescriptions:
The 20,000 acres proposed for treatment above occur on three primary ecological sites: Sandy Loam Upland, Loamy Upland, and Limy Slopes. Prescriptions will vary by ecological site and condition.

Forecast Narrative:
Site-specific burn plans will be developed for each planned unit within a project area. The plan is based on the resource objectives in the environmental analysis for that project. Prescriptions are developed that will achieve resource objectives, allow for firefighter and public safety, and achieve the objectives in the burn permit (smoke management).

Unit Boundaries and Special Considerations:
Prescribed fire units may be delineated within broader treatment areas. Treatment areas are shown on Map 10. Treatment areas may include more than one ecological site. Treatments may include the use of management actions other than, or in combination with, the use of fire.

Unit rotation will be based on minimum fire frequency and drought. If wildland fires occur, the acreage lost to them will be considered in determining the amount of area to be treated with prescribed fire for the year. Rotation of burn units and carefully planned sequencing will distribute short-term impacts throughout the watershed.

Each fire unit will have an operational site-specific burn plan and a smoke permit in place before being ignited. These plans will include special considerations to protect the following:

- riparian areas
- fish habitat
- cultural resources
- habitat of sensitive wildlife species

Precautions will be taken to ensure the safety of structures and other property. As much as possible, natural features and existing roads will be used to confine the fire. Needed fire control lines will be constructed.

To ensure protection of cultural resources, all prescribed burn areas will be inventoried for archaeological properties, historic structures, and traditional use plants. Areas surrounding such cultural properties will be pretreated to prevent destruction during a prescribed burn. These requirements are specified by BLM Instruction Memorandum AZ-90-52, Requirements for Cultural Resource Inventory of Prescribed Burn Areas.

Units will need to rested from grazing after burning (a minimum of two seasons) to enhance the establishment of new perennial grasses and increase the vigor of perennial grasses present before burning. Rest will also allow litter to accumulate and serve as a mulch and ground cover to protect the soil and enhance the seedbed. Once the desired plant communities have been attained, livestock grazing will resume in the unit.

Sediment control will be applied to burn units following BLM national guidelines and requirements and will also consider Best Management Practices prescribed by Arizona Department of Environmental Quality. Pre-burn and post-burn treatments will be evaluated in the operational burn plan for each unit or block of units. Treatments may include seeding, building physical structures, and mechanical and biological treatments. Any areas to be seeded will be seeded with native species or annual species that are not at risk of establishing on the treatment sites. Units that include Lehmann's lovegrass will be evaluated closely before burning since Lehmann's has been shown to spread as a result of fire.

Unit Size:
Desired annual burned acreage in this area for this fuel type is less than 2,500 acres under fire intensity level 1-2 and less than 300 acres under intensity level 3.

Limit fire size in the broadleaf riparian areas to less than 300 acres per year under intensity level 1-2 and less than 50 acres per year under intensity level 3.

Strive to treat 2,000 acres annually with prescribed fire to create a mosaic pattern in semidesert grasslands and to reduce the increasing and invading brushy species while increasing perennial grasses. Pursue a fuels hazard reduction strategy to reduce the intensity and size of wildfire, should one occur.

Note: The unit sizes described above will be re-examined during development of the revised Fire Management Plan in 2004 and may be modified as a result.

Ignition:
Prescribed fires used to improve upland condition will be ignited by hand or aircraft. Helicopters may be used to ignite larger or more complex units.

Agreement:
The use of fire as a tool has some inherent risk. Therefore, it is prudent to have a formal agreement with adjacent landowners that allows for and provides for protection of property. BLM will explore the need for agreements that address the use of fire on the Empire-Cienega Planning Area and that may affect other lands with the State of Arizona, U.S. Forest Service, adjacent private landowners, and the local Natural Resource Conservation District (NRCD), and Sonoita-Elgin Volunteer Fire Department. Any resulting agreement(s) should be a proactive, multi-year fire agreement with annual review. BLM will encourage the opportunity for cooperative efforts to restore grassland vegetation components using fire on other lands in the watershed.

Relationship to Other Plans and Guidance:
Treatments will be implemented according to the BLM Prescribed Fire Management Handbook (H-9214-1) and BLM Safford/Tucson Zone Fire Management Plan (1998) which is scheduled for revision in 2004.

Application of the BLM Safford/Tucson Zone Fire Management Plan (1998):

Because of constant variation in a multitude of factors such as climate; fuels; fire fighting resources available; and risks to life, property and natural resources, this plan is only a guide. The professional judgment of the incident commander, based upon the best information available at the time, will guide the implementing of this plan. Prescribed fire efforts will be curtailed if the target burned acreages are reached through unplanned ignitions.

Constraints common to all the polygons include limiting surface disturbance and fire spread where cultural sites, special status species, or both exist. Fire management staff will meet periodically with program specialists to heighten their awareness of sensitive resources and locations. A practical means to minimize disturbance of sensitive resources will be sought and refined.

Calculation of burned acreages for this plan will include all reported burned acreages by vegetation type or polygon, regardless of ownership. Resource impact is best measured by total acres burned without regard to jurisdictional boundaries. BLM will apply this plan to lands under its jurisdiction and coordinate with and support adjacent jurisdictions. BLM will use the expertise and help of other agencies and entities to achieve multiple use goals through fire.

Recommended actions across all polygons include the following:

- Reducing dangerous fuel buildups near structures.
- Educating the public about wildfire prevention by signing campsites and major roadways or by other forms of outreach
- Continuing to seek increased efficiencies through interagency agreements or other forms of cooperation.

Reaching target burned acreage goals will depend on many factors, including the following:

- Completion and approval of required plans.
- Suitability of weather and resource conditions.
- Availability of financial and personnel resources.

B. CHEMICAL TREATMENTS

Treatments will be conducted according to BLM procedures. The chemicals can be applied by many methods, and the selected technique depends on a number of variables, including the following:

- Treatment objective.
- Physical characteristics of the site, including accessibility and size of the treatment area.
- Characteristics of the target species and the desired vegetation.
- Proximity to sensitive areas.
- Anticipated costs and equipment limitations.
- Water and vegetation condition in the treatment area during the treatment.

Herbicide applications will be scheduled and designed to minimize potential impacts on non-target plants and animals. The rates of application will depend on the following:

- Target species.
- Presence of non-target vegetation.
- Soil type.
- Depth to water table.
- Presence of other water sources.
- Label requirements.

The chemicals will be applied aerially or by ground equipment using vehicles or manual application equipment.

C. MANUAL TREATMENTS

Manual methods of noxious plant control may be practical for the following purposes:

- Clearing scattered plants invading grasslands.
- Cleaning up following other control methods.
- Maintaining treated areas against reinvasion.
- Removing small stands of non-native or poisonous plants before they can spread further.

Simple hand tools such as saws, axes, shovels, and picks are easy to obtain, operate, and repair, but labor costs are high per acre. Workers can also use power tools such as chain saws. In manual treatments workers may cut plants above, at, or below ground level. Although the manual method of vegetation treatment is labor intensive, it can be extremely species selective and can be used around more sensitive habitats and in areas inaccessible to ground vehicles.

D. MECHANICAL TREATMENTS

BLM will also use mechanical methods where practical to control undesirable plants. Choosing the best mechanical method will depend upon several factors:

- Characteristics of the target plant species (density, size of stem, brittleness, and sprouting ability).
- Need for seedbed preparation and revegetation of the treated area.
- Topography and terrain of the treatment area.
- Kind of soil (depth, amount of rock, erosiveness, and degree of compaction).
- Site potential. (The cost of improvement should be consistent with expected productivity.)

Some possible methods include bulldozing, root cutting, plowing, disking, chaining, brush cutting and crushing, mowing, contouring, seedbed preparation, and planting.

E. BIOLOGICAL TREATMENTS

Biological methods of vegetation treatment employ living organisms to selectively suppress, inhibit, or control herbaceous and woody vegetation. Methods can include selective grazing by livestock such as goats, sheep, or cattle, and selective use of insects and pathogens.

APPENDIX 9

MONITORING PROTOCOLS

INTRODUCTION

The following protocols are used in current monitoring for riparian vegetation, aquatic habitats, native fish and upland vegetation. Current monitoring will be expanded and developed into a broad ecological monitoring program (discussed in the second part of this section). The monitoring program will be further developed and summarized in the Long-term Ecological Monitoring Program Document.

RIPARIAN MONITORING PROTOCOL FOR RIPARIAN AREAS OF CIENEGA CREEK AND TRIBUTARIES

Background

BLM inventoried riparian areas along Cienega Creek and its tributaries on public lands from December 1988 through July1989 (see Chapter 3, Table 3-9). The riparian inventory techniques are outlined in the Phoenix District's Riparian Area Condition Evaluation (RACE) Handbook (BLM 1987d). As a result of the 1988-89 inventory, 11.1 miles (60%) of riparian habitat received ratings of 5_11 for an overall unsatisfactory rating, and 7.5 miles (40%) of riparian habitat received total ratings of 12_16 for an overall satisfactory rating.

In 1993 and again in 2000, BLM re-assessed the riparian areas along Cienega Creek using the riparian evaluation portion of the RACE inventory. The results showed continued improvement along much of the creek. Of the 11.9 miles of riparian habitat evaluated in 1993, 8.5 miles (71%) were in satisfactory condition, and 3.4 miles (29%) were in unsatisfactory condition. Of the 12.5 miles assessed in 2000, 100% were in satisfactory condition (see Chapter 3, Table 3-9; Appendix 3, Riparian Area Conditions and Management). Riparian proper functioning condition assessments completed in 1993 and in 2000 showed similar trends with the percentage of the creek in proper functioning condition increasing from 2% to 61% (see Chapter 3, Table 3-10, Appendix 3, Riparian Area Conditions and Management).

Protocol

Riparian condition of Cienega Creek, Empire Gulch, Mattie Canyon, and Gardner Canyon will be reassessed every five years using the condition assessment portion of the Riparian Area Condition Evaluation (RACE) inventory as well as the Bureau's Riparian Proper Functioning Condition Assessment.

In addition, 5 key riparian segments will be selected along Cienega Creek for more comprehensive evaluation. These minimum ½ mile segments will also be sampled every five years.

In riparian key areas which are dominated by a cottonwood-willow vegetation community, ten belt transects, 10 feet in width, and spanning the entire floodplain, perpendicular to the stream, will be sampled; the distance between transects will be approximately 250 feet. Within each belt transect, the total number of seedlings, saplings, mature and old trees will be counted by species. The length of each transect (across the flood plain) will also be recorded so that densities of the different age classes can be calculated for each site. Seedlings are defined as plants less than 1 inch diameter at breast height (dbh) or less than six feet tall; saplings are defined as plants 1_6 inches dbh or greater than six feet tall; mature trees are defined as 6-20 inches dbh; and old trees are defined as greater than 20 inches dbh. For seedlings, utilization (based on browsing of apical stem) will be measured on a sub sample of 50 or 100 seedlings (depending on availability) spread over the 10 bands. At each band, the lengths of six different ecological sites (aquatic, regeneration zone, river wash, lower terrace sand bottom, mid terrace sand bottom, upper terrace loamy bottom, upper terrace loamy woodland) will also be measured across the flood plain. These lengths will be used to calculate the percentages of each riparian ecological site at each key segment. Two photo points will be established at each site and two photographs will be taken at each photo point, one facing upstream and one downstream.

Since the intensive riparian monitoring described above was developed, the vegetation along much of Cienega Creek has made the transition to a cienega-dominated system. Monitoring methodologies for riparian key areas dominated by cienega plant communities are still being determined. At a minimum, the percentage of marsh habitat will be monitored using aquatic habitat sampling (see method below), plant composition of upper and lower banks will be monitored in plots along transects, and the percent vegetation cover on stream banks will be monitored according to Platts et al (1983).

AQUATIC HABITAT MONITORING CIENEGA CREEK

Background

In 1989-90 BLM classified all aquatic habitats along the perennial length of Cienega Creek and inventoried them for characteristics related to fish habitat. BLM inventoried habitat type and 12 parameters of habitat complexity, including depth, vegetation cover in the water, cover overhanging the water's surface, and undercut banks. In 2000 BLM re-assessed aquatic habitats along four segments of Cienega Creek to determine change over the 10-year period (see Chapter 3, Tables 3-11, 3-12, and 3-13). The selected segments varied from 0.28 to 0.52 miles in length. They were monitored for the same fish habitat characteristics as in 1989-90.

Protocol

Aquatic habitats will be re-assessed every five years along Cienega Creek at the permanent monitoring stations established along four stream reaches. The stations, tied to easily identifiable landmarks, vary from 0.28 to 0.52 miles in length. Within each monitoring segment, habitats will be classified sequentially using the stream habitat classification schemes in McCain et al. (1989) and Hawkins et al. (1993) with the addition of "marsh" as a habitat type. For each habitat unit, the following parameters important to defining fish habitat will be collected: substrate, length, mean channel width and water depth, maximum depth, woody cover, overstory canopy cover, overhanging vegetation, floating vegetation, emergent vegetation, submergent vegetation, undercut bank, bedrock or boulder ledge, Bank stability will be evaluated by measuring the linear quantity of stable and unstable (or disturbed) stream bank and its apparent cause following methods of Platts et al. (1983). In addition basic water quality parameters including temperature, D.O., pH, water clarity (Secchi depth), and conductivity will be measured.

NATIVE FISH MONITORING - CIENEGA CREEK

Background

Since 1988, native fish populations and habitats have been monitored annually along Cienega Creek. The number of sample locations has varied between three and twelve. The location of these stations is tied to pool habitats. Pool selection varied within specific stream reaches from year to year due to the dynamic nature of channel features.

Protocol

A minimum of 5 stations will be sampled each year along Cienega Creek. At each station, 200 meters of aquatic habitat will be sampled for native fish using fine meshed (1/8 inch) double weighted seines or a backpack electro shocker, depending on the stream conditions. Prior to sampling, the stream transect will be divided into macrohabitats using the same classification system employed for the Aquatic Habitat Monitoring. Afterwards, each macrohabitat will be sampled independently by a single pass of the appropriate sampling equipment. Fish numbers will be enumerated by species and age class (juveniles vs. adults). These data will be recorded for each macrohabitat along with the distance of individual seine hauls or the number of shocking seconds in that macrohabitat. From these data, the relative abundance by species and age class will be calculated and an index (catch per unit effort) to absolute abundance will be estimated by normalizing fish numbers by the distance, area or time sampled. Three photo points will be established at each monitoring station, one on the downstream end of the transect, one on the upstream end, and one in the center. Two photographs will be taken at each photo point, 1 looking upstream, the other looking downstream, to document gross channel features along the transect and adjacent to it. All monitoring stations will be sampled annually in September through November.

MONITORING STREAMFLOW - CIENEGA CREEK

Background

BLM measured instantaneous discharge on Cienega Creek monthly from 1988 to 1994 at two stations. One station was located in the reach between Pump and Fresno canyons and the other was located near the confluence of Oak Tree Canyon and Cienega Creek. In 1995 a stream gaging station (water level recorder and galvanized housing) was installed at the site of an old masonry dam on Cienega Creek just above the confluence with Sanford Canyon. Continuous operation of this gage has been limited by maintenance problems and inundation by flood flows. The BLM, in partnership with the U.S. Geological Survey (USGS), will be installing a new continuous recording stream gage at the same location in 2001.

Protocol

Since late 2001, continuous stream flow information has been available from this gage on the USGS real time gage network (http://az.water.usgs.gov/rt-cgi/gen_tbl_pg).

UPLAND VEGETATION MONITORING

Background

Ecological site inventories have been completed for the Empire-Cienega and Empirita allotments. The results of these inventories and locations of monitoring transects are included in Appendix 3.

Vegetation Sampling Procedures

The following vegetation sampling procedures were followed in the delineated ecological site write-up areas to determine the current conditions:

A 500-foot-long transect (or two parallel transects - 250 feet each) was run in each ecological site where there was a notable difference in appearance. One hundred sample plots (40 cm X 40 cm) were read along the transect at five foot intervals. Vegetation composition, production, species frequency, and ground cover were measured in each plot.

Vegetation Composition

The Dry Weight Rank method of estimating plant species composition was used (Methods of monitoring rangelands and other natural area vegetation, by G. Ruyle, University of Arizona, Division of Range management, Extension Report 9043).

One hundred - 40 cm X 40 cm quadrants were sampled along each 500-foot transect. The three most abundant species on a dry weight basis were identified in the quadrant and ranked. The species yielding the highest annual above ground production was given a rank of 1, the next highest a 2, and the third highest a 3. If a quadrant had less than three species, more than one rank was assigned to some species. The dry weight rank method assumes that a rank of 1 corresponds to 70% composition, rank 2 to 20%, and rank 3 to 10%. These weighing factors were derived empirically (Mannetje and Haydock, 1963). To estimate percent composition for the species within the write-up area, the ranks for each species were summed, multiplied by the weighing factor for each rank, and divided by the sum of the weighted ranks for all species combined.

Vegetation Production

The comparative yield method for estimating range productivity was used (Methods of monitoring rangelands and other natural area vegetation) by G. Ruyle University of Arizona, Division of Range management, Extension Report 9043).

Five reference quadrants or standards (40 cm X 40 cm) were selected adjacent to the transect to represent the range in dry weight of standing plant biomass which was likely to be encountered along the 500-foot transect. The five standards were clipped and weighed to document the production. The transect was then run sampling 100 quadrants along the transect. The vegetation yield in each plot was then compared to the standards and placed in the closest rank.

To estimate the total plant production in lbs/acre, the number of quadrants in each of the comparative yield standards is summed and multiplied by the number of grams clipped for that standard. This total is then multiplied by 0.557 to convert the grams to lbs/acre for that standard. This is done for all five standards. These totals are then added together to calculate the total lbs/acre for the ecological site. To calculate the production of an individual species, the percent composition of the species can be obtained by multiplying the percent composition for that species by the total production for the site.

Plant Species Frequency

The relative abundance of each plant species in each ecological site write-up area was determined using the Pace Frequency sampling method (Methods of monitoring rangelands and other natural area vegetation) by G. Ruyle, University of Arizona, Division of Range Management, Extension Report 9043).

Again 100 quadrants (40 cm X 40 cm) were sampled along a 500-foot transect. The frequency of occurrence for each species was calculated. Herbaceous vegetation species (grasses and forbs) were counted as occurring if they were rooted in the quadrant. Trees and shrubs were counted if they were either rooted in or had canopies that overhung the quadrant. The probability of occurrence for a species (total frequency) was calculated by dividing the number of occurrences by the total number of quadrants (100) sampled.

Ground Cover

Ground cover was measured using along the same 500-foot transect by collecting point intercept data. A pointer was attached on the quadrant frame used for sampling. One hundred points were recorded along the transect. The following categories were used to group cover:

Ground Cover Categories

- Bare Ground 0 to 0.24 inches
  - Gravel 0.25 inches to 3 inches
  - Rock >3 inches
  - Litter (includes annual plants)

Live Vegetation

- Grass/Forb Basal Cover
- Canopy Cover
- Shrubs/Trees
- Basal Cover
- Canopy Cover

The ground cover "hit" was determined by visualizing the pointer from a raindrop viewpoint. The first category of cover that the raindrop would intercept on its path to the ground was counted as the "hit". The percent cover was then calculated by dividing the number in each category by the total number of points sampled (100).

Utilization

The utilization limit of 30 to 40 % applies in favorable, normal, or unfavorable years. In monitoring utilization, BLM will attempt to identify the utilization patterns across the entire unit or area being used. Use would be measured about the time cattle are moved from the unit or when the current use level is felt to be near that desired limit. The guidelines for identifying the key monitoring areas would be based on the size and location of the unit being used (usually only a portion of a single pasture is used based on which primary waters are being used and the topography and season of use the unit is being grazed). There may be several units of usability within a pasture. Generally, these units average 250 to 500 acres and are used by the main herd for a period of a couple of weeks. Normally, use will be measured one-third to one-half mile from the primary water. When the desired use levels are reached, cattle will be moved to the next unit. The Grazed-Class photo guide method (as identified by the University of Arizona) is one method that may be used to monitor utilization and a photograph taken to “show” the conditions measured. Other methodologies may be used based on the Technical Review Team input.

PROPOSED UPLAND VEGETATION MONITORING

The monitoring methodologies to be used and the timeframes for collection are as follows:

Upland Vegetation Monitoring Schedule

Study Type	Method	Timeframe
Trend Studies	Pace Frequency	
Ecological Condition	BLM - ESI	
Plant Composition		
Herbaceous Species	Dry Weight Rank	
Woody Species	Clipping Tables	
Plant Production		
Herbaceous Species	Comparative Yield	
Woody Species	Clipping Tables	
Substrate Composition		
Shrub Canopy Cover	Need Protocol	
Ground Cover	Point Intercept	

ECOLOGICAL MONITORING PROGRAM
--DRAFT--

INTRODUCTION

In February 2000, the Bureau of Land Management and Sonoran Institute co-sponsored a technical workshop that focused on how to monitor ecological conditions on the Empire-Cienega Resource Conservation Area (RCA) in southeast Arizona. Participants were technical experts from agencies, conservation organizations, academia, and the private sector who have specialized knowledge of the area and its resources.

The goal of the workshop was to frame a threat-based ecological monitoring program for the Empire-Cienega RCA (since designated as the Las Cienegas National Conservation Area) that will ensure both short- and long-term protection of the area's natural resources under a flexible, multi-use management plan.

As a framework for discussions on a threat-based monitoring program, participants reviewed the significant resources and threats which were identified for the proposed Las Cienegas National Conservation Area in the 1999 Cienega Creek Watershed Proposed NCA Assessment.

Significant Resources Identified in the 1999 Cienega Creek Watershed Proposed NCA Assessment:

- Caves and Geology
- History and Archaeology
- Landscape Integrity
- Ranchlands/Ranching
- Recreational Opportunities
- Plant Communities: Upland and Riparian
- Views
- Water Resources
- Wildlife

Significant Threats Identified in the 1999 Cienega Creek Watershed Proposed NCA Assessment:

- Habitat Loss and Fragmentation
- Exotic Animals and Plants
- Groundwater Pumping/Extraction
- Recreation
- Inappropriate Grazing
- Vehicular Traffic, Off-Highway Vehicles
- Urbanization and Development
- Fire Suppression
- Mining
- Channelization

Participants then broke out into 5 groups, each focused on a specific resource category:

- Water
- Riparian/Wetland Vegetation

- Upland Vegetation
- Aquatic Wildlife
- Terrestrial Wildlife

Each resource group was tasked with identifying the key ecosystem processes and/or most important resources to monitor for their resource category. For each monitoring component they identified, the five groups then listed the most important monitoring/research questions associated with that component; significant stressors impacting the component; the parameters that should be measured to monitor the condition of the component; and critical linkages among that monitoring component and those addressed by other resource groups. As time permitted, the groups also listed ideas for partnership opportunities and determining thresholds for stressors impacting the system.

RESOURCE GROUP SUMMARIES

The following summaries highlight the key ecosystem processes and resources (i.e., monitoring components) and monitoring parameters that were identified by each of the five resource groups.

This information will be used as the foundation to develop the details of an ecological monitoring program for the NCA.

1. Water Resource Group

Participants: *Bill Branan, Julia Fonseca, Brenda Houser, Lin Lawson, Bill Peachey; facilitated by Shel Clark*

A. Key Ecosystem Processes/Resources:

- Groundwater (Quality and Quantity)
- Surface Water (Quality and Quantity)
- Precipitation

B. Parameters which should be monitored:

Groundwater

Water Quantity:

- Well inventory including current number of wells (baseline) and changes or expansions in network.
- Groundwater levels in riparian monitoring sites – use well points in your cross-sections
- Groundwater levels in areas of potential threats (e.g., the Sonoita area) – use existing wells

Water Quality – in wells (drinking water) and springs:

- Nutrients
- Metals
- SDWA
- Others depending on threats

Surface Water

Water Quantity and Quality:

- Natural variability in length of perennial stream reaches, driest conditions
- Instantaneous base flows of stream during driest conditions
- Data from fixed-continuous stream gauge (stage, temperature, pH, EC)
- Data from crest-stage recorders in tributaries
- Annual inspection of springs for flows, pH, etc.

Precipitation

- Rainfall from multiple gauges in watershed.

2. Riparian/Wetland Vegetation Resource Group

Participants: *Mark Briggs, Dave Gori, Ron Tiller, Frank Toupal, Marty Tuegel, and Peter Warren; facilitated by Mary Vint*

A. Key Ecosystem Processes/Resources:

Hydrogeomorphological Processes

- Hydrogeomorphology/Proper Functioning Condition (HGM/PFC) stream system assessment[1]
- Groundwater Conditions[2] (depth to saturated soils, recharge)
- Streamflow Characteristics[2] (flow, volume, patterns)
- Channel Morphology and Sediment Movement (aggradation/erosion; bank stability, channel cutting, gully formation)
- Aquatic Habitats[2]

Biotic Resources

- Sensitive Plants (e.g., endangered water umbel)
- Vegetation Mosaic (is it representative, including cottonwood-willow gallery forest, mesquite bosque, sacaton grassland, streambank herbaceous vegetation, and cienega?)
- Sacaton Bottomlands (are they healthy/functioning?)
- Herbaceous Perennials
- Exotic vs. Native Species
- Biodiversity
- Recovery of Agricultural Fields

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[1] See *Applied River Morphology* by Dave Rosgen for information on HGM assessment; the PFC concept is addressed in a number of BLM technical reports.

[2] Note: The riparian resource group did not fill out a separate worksheet on how to monitor groundwater conditions, streamflow characteristics, or aquatic habitats, since the Water Resource and Aquatic Wildlife Groups addressed these components.

B. Parameters which should be monitored:

Sacaton Grasslands

- Basal Area and Percent Cover (plots or transects)
- Reproductive Effort (panicle numbers)
- Population Demographics
- Water Stress / Physiology
- Seedling Recruitment (use permanent plots and tagging to track fate of seedlings)
- Percent Cover of Mesquite or Light Interception (PAR or LA1)
- Recovery Patterns (GPS within permanent, reproducible grids established on agricultural fields and/or use low level aerial photography)

Cottonwood -Willow Forest and Stream Channel Vegetation

- Species Composition
- Woody Species Density / Age Classes
- Sapling Density

To monitor species composition, woody species density / age classes, and sapling density, establish stream cross-section transects with sub-plots at intervals.

- Herbaceous Understory Composition Frequency

To monitor herbaceous, streambank vegetation, arrange study plots in a linear array along the channel bank, and record frequency and percent cover using the point intercept method.

Cienega Vegetation

- Cienega Morphology
- Species List
- Density Of Species
- Sediment Input, Stability
- Changes in Cienega Reach Length
- Streamflow
- Depth of Groundwater

Huachuca Water Umbel

- Map occurrences of patches (if patchy)
- Conduct frequency plot sampling along reaches where distribution is more continuous.

3. Upland Vegetation Resource Group

Participants: *Wally Alexander, Dave Bertelson, Steve Boice, Don Breckenfeld, Grant Drennen, Kristen Egen, David Hodges, Linda Kennedy, Gerald Korte, Phil Ogden, Dan Robinett, Stephen Wood; facilitated by Alex Conley*

A. Key Ecosystem Processes/Resources:

- Precipitation
- Plant Species Frequency, Composition, and Density
- Reference Areas
- Soils
- Cover (Plant, Soil, and Wildlife)
- Utilization / Residual Biomass
- Spread of Exotics / Invaders
- Agave Densities / Nectar Production
- Swales and Drainages
- Fire Records
- Production

B. Parameters which should be monitored:

Plant Species Attributes

- Methods need to be objective (repeatable by different people) so that good estimates of trend can be developed using data from different observers.

- Similarity indexes can be used to assess the progress of a site towards or away from a desired condition. Identifying what is desired is important.

- Frequency and dry-weight rank have been monitored since 1995. Repeat photography is also used at identified key areas. The existing protocol might be improved by adding a measure of density based on the distance to the nearest plant.

- Monitoring data should be used to determine condition and trend for each site.

Soils

- Soil texture, horizons, and depth to restricting layer are good basic measures of soil type and status. Remote imagery can be used to stratify sampling sites.

- Compaction can be monitored by looking at bulk densities and using a densiometer. A penetrometer can provide relative measurements of compaction; a relationship can also be built to convert these measures to bulk density.

- Long-term measurements of soil moisture could be useful.

- Research to correlate changes in soils to changes in vegetative attributes for each soil type would make extensive monitoring much easier.

- Erosion can be monitored by looking at pedestaling and root exposure.

- Visual assessments and repeat photography can be used to monitor headcutting, gullying, and wind erosion.

- Erosion pins can help monitor sheet erosion.

- A ten-point cover frame can be used to measure microtopography

- The WEP model could be useful for erosion prediction, but is data intensive. It uses the distance to nearest plant measurement discussed earlier.

- Measurements of soil crusting could be useful.

Reference Areas

- Reference areas must be big enough to be representative of undisturbed conditions (e.g., big enough to support their own rodent populations), representative of the topography and vegetation types being monitored, and not on an ecotone.

- Reference areas should be set up whenever management is changed, to be used as treatment-specific controls.

- Sampling should be reproducible.

- Documentation of past and current uses should be kept.

- Monitoring should be done at the same time (season) that other sites are monitored.

Cover

- Must first determine what sort of cover and for what managing for-

- Ground cover is being monitored as part of the plant species attribute monitoring (but should be increased from 100 to 400 points per key area).

- Aerial photos can be used to determine tree/shrub cover.

- Canopy cover could easily be added to existing monitoring by estimating Daubenmire cover in each frequency frame.

- For sparrows, grass height and percent of habitat at height x are useful measures. This could be added to existing monitoring efforts by measuring average grass height for each quadrant on the sampling frame.

Utilization

- Formal measurements not currently made but estimates are used in managing livestock.
- Must clearly define type of utilization being measured.
- Timing and method of measurement must be consistent.
- Distribution of utilization is also important; measuring key areas alone may not be enough.
- True utilization is measured after the end of the grazing season
- Stubble height and percent of area that meets criteria are useful measures for determining the amount of cover for sparrows and antelopes.

Exotics and Invasive Species

- Use network of upland vegetation transects.
- Remote sensing to map lovegrass areas and extent.
- Interpretation of historic and recent air photography to measure the extent and rate of mesquite encroachment.

4. Aquatic Wildlife Resource Group

Participants: *Mac Donaldson, Doug Duncan, Jeff Simms, Dale Turner; facilitated by Josh Schachter*

A. Key Ecosystem Processes/Resources:

Ecosystem Processes

- Recharge
- Flooding
- Perennial Surface Flow
- Sediment Balance
- Succession of Riparian Plant Community to a Cienega
- Fluvial Processes that Promote Habitat Diversity
- (flooding, sediment deposition, etc.)
- Fire
- Nutrient Cycling

Resources (surrogates for processes)

Top Priority
- Water Quality
- Vegetative and Aquatic Habitat Diversity
- Native/Non-native Species
- Invertebrates (snails and aquatic insects)
- Amphibians, Reptiles, and Fish

Priority Resources Overlapping With Other Resource Groups

- Surface
- Water Quantity
- Types of Surface Water (springs, seeps, creeks, marshes
- Ducks and Flycatchers
- Micro-organisms (bacteria, algae)

Non-priority

- Small Crustaceans

B. Parameters which should be monitored:

Vegetative and Aquatic Habitat Diversity

- Watershed Condition (see Upland Vegetation Group)
- Water Quantity (see Water Group)
- Bank Disturbance (amount of exposed bank
- Fire Effects (monitor water quality and sediment)
- Exotic Vegetation (check for presence and distribution)

Amphibians, Reptiles, Fish and Native Species

- Presence, Distribution, and Abundance of Natives and Problem Non-natives

Invertebrates

- Macroinvertebrate
- Abundance and Diversity

5. Terrestrial Wildlife Resource Group

Participants: *Anita Cramm, Caleb Gordon, Dave Krueper, Janet Ruth, Sherry Ruther, Mike Seidman, Tim Snow, Frances Werner, Jeff Williamson; facilitated by Karen Simms*

A. Key Ecosystem Processes/Resources:

Riparian Specialists

- Birds
- Small Mammals

Grassland Specialists / Endemics (includes sacaton and upland grasslands)

- Birds
- Small Mammals
- Invertebrates
- Biodiversity

B. Parameters which should be monitored:

Riparian Specialists

- song sparrow
- common yellow throat
- yellow-breasted chat
- red bat

Grassland Specialists/Endemics

Birds

- Site fidelity of sparrows (Cassin's and Botteri's), aplomado falcon
- Density of birds – flushing into nets for sparrows (very intensive); transects for all others
- Biomass/density of grass
  - Grass height 6-8" (average) **may need to modify
  - < 10% shrub composition
  - 75% cover (basal) – grass/grass litter
  - *Note: need to be added to grassland bird sub-objective*
  - compositional diversity of grasses
  - native perennial bunchgrasses (not just blue gramma/Lehmann's)
- Productivity and Survivorship –
- Nest search and nest monitoring – Mayfield method may be most
- Breeding birds on territories
- Point counts of singing birds (Cassin's, Botteri's in sacaton)

Small Mammals

- At a minimum, monitor diversity and density of rodents in a typical river bottom environment and an upland grassland habitat. Also monitor diversity and density of rodents in a mostly native grassland area and in an area dominated by Lehmann's lovegrass to determine whether rodents are being affected by the invasion of this exotic. Measurements should be taken once or twice a year using grid trapping.

- Banner-tailed kangaroo rats (*Dipodomys spectabilis*): map and number mounds and determine if active.

- Bats – Endangered lesser long-nosed bat (*Leptonycteris curasoae*): Monitor use of specific agaves by bats at least every other year during the third week of August over several nights. A different agave should be monitored each night.

- Mist netting along Cienega Creek could be used to periodically sample bat diversity in the area.

Invertebrates: **to be completed**

Biodiversity: **to be completed**

CONCLUSION

This information is a **draft** summary of expert opinion regarding which ecosystem processes and resources should be monitored—and how—in order to ensure that the Empire-Cienega RCA's (now Las Cienega NCA's) water, vegetation, and wildlife resources are protected over both the short and long term under a flexible, multi-use management plan. These recommendations will be incorporated into a threat-based ecological monitoring program for the RCA (now NCA) that will be an integral part of the BLM's Las Cienegas Resource Management Plan. Cultural resources, views, and human uses including recreation will be focused on in future efforts so the monitoring program can be expanded to address them (see Monitoring Framework). In addition, if lands are added to the NCA in the future with cave resources, then monitoring protocols for cave resources will also be developed.

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ABBREVIATIONS

ACEC: Area of critical environmental concern

ADEQ: Arizona Department of Environmental Quality

AGFD: Arizona Game and Fish Department

APD: Acquisition Planning District

ASLD: Arizona State Land Department

BLM: Bureau of Land Management (U.S. Department of the Interior)

CRPP: Cultural resource project plan

CYL: Cattle year-long

FLPMA: Federal Land Policy Management Act

MLRA: Major land resource area

NCA: National Conservation Area

NEPA: National Environmental Policy Act

NRCD: Natural Resource Conservation District

NRCS: Natural Resources Conservation Service (U.S. Department of Agriculture)

OHV: Off-highway vehicle

PFC: Proper functioning condition

PNC: Potential natural community

RACE: Riparian Area Condition Evaluation

RMP: Resource management plan

ROD: Record of Decision

RRT: Rangeland resource team

SVAPD: Sonoita Valley Acquisition Planning District

T&E: Threatened and endangered

USFWS: United States Fish and Wildlife Service

USGS: United States Geological Survey

VRM: Visual resource management

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